DCR-TRV410/TRV410E/
TRV510/TRV510E
RMT-814

SERVICE MANUAL

US Model
Canadian Model
DCR-TRV510
AEP Model
UK Model
DCR-TRV410E/TRV510E
E Model
Hong Kong Model
Tourist Model
DCR-TRV410/TRV410E
Australian Model
Chinese Model
DCR-TRV410E

B800 MECHANISM

Self Diagnosis Supported model

Ver 1.2 2001. 01

Digital Handycam
Digital 8
InfoLITHIUM

Photo: DCR-TRV510

NTSC MODEL : DCR-TRV410/TRV510
PAL MODEL : DCR-TRV410E/TRV510E

For MECHANISM ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL Ⅶ" (9-973-801-11).

SPECIFICATIONS

Video camera recorder

System

Video recording system
2 rotary heads
Helical scanning system
Audio recording system
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)
Video signal
DCR-TRV410/TRV510:
NTSC color, EIA standards
DCR-TRV410E/TRV510E:
PAL colour, CCIR standards
Recommended cassette
Hi8 video cassette
Recording/playback time
DCR-TRV410/TRV510:
(using 120 min. cassette)
DCR-TRV410E/TRV510E:
(using 90 min. cassette)
1 hour
Fastforward/rewind time
DCR-TRV410/TRV510:
(using 120 min. cassette)
DCR-TRV410E/TRV510E:
(using 90 min. cassette)
Approx. 8 min.
Image device
1/4 inch CCD (Charge Coupled Device)
DCR-TRV410/TRV510:
Approx. 460,000 pixels
(Effective: Approx. 290,000 pixels)
DCR-TRV410E/TRV510E:
Approx. 800,000 pixels
(Effective: Approx. 400,000 pixels)

Lens
Combined power zoom lens
Filter diameter 37 mm (1 7/16 in.)
20× (Optical),
DCR-TRV410/TRV510:
360× (Digital),
DCR-TRV410E/TRV510E:
80× (Digital)
Focal length
3.6 - 72 mm (5/32 - 2 7/8 in.)
When converted to a 35 mm still camera
DCR-TRV410/TRV510:
41 - 820 mm (1 5/8 - 32 3/8 in.)
DCR-TRV410E/TRV510E:
46 - 920 mm (1 13/16 - 36 1/4 in.)
Colour temperature
Auto
Minimum illumination
DCR-TRV410/TRV510:
1 lux (F1.4)
DCR-TRV410E/TRV510E:
3 lux (F 1.4)
0 lux (in the NightShot mode)*
* Objects unable to be seen due to the dark can be shot with infrared lighting.
Built-in flash memory
(DCR-TRV510/TRV510E only)
2MB
JPEG compression

Input and output connectors

DCR-TRV410/TRV410E: E, HK, JE, AUS, CN/TRV510:
S video input/output
DCR-TRV410E: AEP, UK/TRV510E:
S video output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 ohms, unbalanced
DCR-TRV410/TRV510:
Chrominance signal: 0.286 Vp-p,
DCR-TRV410E/TRV510E:
Chrominance signal: 0.3 Vp-p,
75 ohms, unbalanced
DCR-TRV410/TRV510:
Video input/output
DCR-TRV410E/TRV510E:
Video output
Phono jack, 1 Vp-p, 75 ohms, unbalanced
DCR-TRV410/TRV510:
Audio input/output
DCR-TRV410E/TRV510E:
Audio output
Phono jacks (2: stereo L and R)
327 mV, (at output impedance 47 kilohms) impedance less than 2.2 kilohms
RFU DC OUT
Special minilack, DC 5V

DCR-TRV410/TRV510:
i DV input/output
DCR-TRV410E/TRV510E:
i DV output
4-pin connector
Headphone jack
Stereo minijack (ø 3.5 mm)
LANC control jack
Stereo mini-minijack (ø 2.5 mm)
MIC jack
Minijack, 0.388 mV low impedance with 2.5 to 3.0 V DC, output impedance 6.8 kilohms (ø 3.5 mm)
Stereo type
DIGITAL I/O
(DCR-TRV510/TRV510E only)
Minijack (ø 3.5 mm) stereo type
Transfer rate: Max. 115.2 Kbps

LCD screen

Picture
4 inches measured diagonally
80.7 × 58.9 mm (3 1/4 × 2 3/4 in.)
Total dot number
112,086 (479 × 234)

- Abbreviation
  HK : Hong Kong model
  JE : Tourist model
  AUS : Australian model
  CN : Chinese model

Digital 8 DIGITAL VIDEO CAMERA RECORDER

MICROFILM

SONY®

General

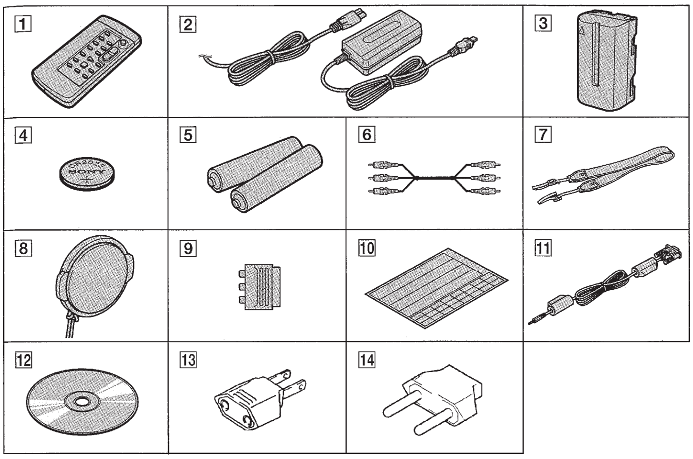
Power requirements
7.2 V (battery pack)
8.4 V (AC power adaptor)
Average power consumption (when using the battery pack)
During camera recording using LCD
DCR-TRV410/ TRV410E: 4.4 W
DCR-TRV510/ TRV510E: 4.6 W
Viewfinder
DCR-TRV410/ TRV410E: 3.1 W
DCR-TRV510/ TRV510E: 3.3 W
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to +60°C (–4°F to +140°F)
Dimensions (Approx.)
108 × 117 × 206 mm
(4 3/8 × 4 5/8 × 8 1/8 in.) (w/h/d)
Mass (approx.)
1kg (2 lb 3 oz)
excluding the battery pack, lithium battery, cassette and shoulder strap
1.1 kg (2 lb 6 oz)
including the battery pack NP-F330, lithium battery CR2025,
120min. (DCR-TRV410/TRV510)
90min. (DCR-TRV410E/TRV510E)
cassette and shoulder strap
Supplied accessories
See page 2.

AC power adaptor

Power requirements
100 - 240 V AC, 50/60 Hz
Power consumption
23 W
Output voltage
DC OUT: 8.4 V, 1.5 A in operating mode
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to +60°C (–4°F to +140°F)
Dimensions (approx.)
125 × 39 × 62 mm
(5 × 1 9/16 × 2 1/2 in.) (w/h/d)
excluding projecting parts
Mass (approx.)
280 g (9.8 oz)
excluding power cord
Cord length (approx.)
Mains lead: 2 m (6.6 feet)
Connecting cord: 1.6 m (5.2 feet)

Design and specifications are subject to change without notice.

Supplied accessories



1 **Wireless Remote Commander** (1)
2 **AC-L10A/L10B/L10C AC power adaptor** (1), **Mains lead** (1)
3 **NP-F330 battery pack** (1)
4 **CR2025 lithium battery** (1)
The lithium battery is already installed in your camcorder.
5 **R6 (size AA) battery for Remote Commander** (2)
6 **A/V connecting cable** (1)
7 **Shoulder strap** (1)
8 **Lens cap** (1)
9 **21-pin adaptor** (1)
DCR-TRV410E: AEP, UK/TRV510E only
10 **Label sheet for cassette** (1)
Stick this label on the recorded cassette.
11 **PC serial cable** (1)
DCR-TRV510 / TRV510E only
12 **Application software: PictureGear 3.2Lite**
DCR-TRV510 / TRV510E only
13 **2-pin convertion adaptor** (1)
DCR-TRV410: E, Hong Kong/TRV410E: E, Hong Kong model only
14 **2-pin convertion adaptor** (1)
DCR-TRV410: Tourist /TRV410E: Tourist model only

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Table for differences of function

Model	DCR-TRV410	DCR-TRV410E		DCR-TRV510	DCR-TRV510E	Remark
Destination	E, HK, JE	AEP, UK	E, HK, AUS, CN, JE	US, CND	AEP, UK	
Color system	NTSC	PAL	PAL	NTSC	PAL	NTSC : X251 is 28.6363MHz PAL : X251 is 28.375MHz
Lens	20×	20×	20×	20×	20×	
Digital zoom	360×	80×	360×	360×	80×	
CCD imager	720H	960H	960H	720H	960H	960H: with IC503 of VC-213 board, CD-213 board 720H: CD-212 board
LINE REC	○	×	○	○	×	○: with REC button and Q641- 644 of VC-213 board
RS232C	×	×	×	○	○	○: PC-72 board
CD board	CD-212	CD-213	CD-213	CD-212	CD-213	

- Abbreviation
  CND : Canadian model
  HK : Hong Kong model
  AUS : Australian model
  CN : Chinese model
  JE : Tourist model

TABLE OF CONTENTS

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS ······ 7
2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT) ······ 7

SELF-DIAGNOSIS FUNCTION

1. Self-diagnosis Function ······ 8
2. Self-diagnosis Display ······ 8
3. Service Mode Display ······ 8
3-1. Display Method ······ 8
3-2. Switching of Backup No. ······ 8
3-3. End of Display ······ 8
4. Self-dignosis Code Table ······ 9

1. GENERAL

- Checking supplied accessories ······ 1-1
- Quick Start Guide ······ 1-1
- Getting Started ······ 1-2
  - Using this manual ······ 1-2
  - Step 1 Preparing the power supply ······ 1-2
    - Installing the battery pack ······ 1-2
    - Charging the battery pack ······ 1-2
    - Connecting to the mains ······ 1-4
  - Step 2 Inserting a cassette ······ 1-4
- Recording – Basics ······ 1-5
  - Recording a picture ······ 1-5
    - Shooting backlit subjects (BACK LIGHT) ······ 1-7
    - Shooting in the dark (NightShot) ······ 1-7
  - Checking the recording – END SEARCH/EDITSEARCH/Rec Review ······ 1-7
- Playback – Basics ······ 1-8
  - Playing back a tape ······ 1-8
  - Viewing the recording on TV ······ 1-9
- Advanced Recording Operations ······ 1-10
  - Photo recording ······ 1-10
  - Using the wide mode ······ 1-11
  - Using the fader function ······ 1-11
  - Using special effects – Picture effect ······ 1-12
  - Using special effects – Digital effect ······ 1-12
  - Using the PROGRAM AE function ······ 1-13
  - Adjusting the exposure manually ······ 1-14
  - Focusing manually ······ 1-14
  - Inserting a scene ······ 1-15
- Advanced Playback Operations ······ 1-15
  - Playing back a tape with picture effects ······ 1-15
  - Playing back a tape with digital effects ······ 1-15
  - Quickly locating a scene using the zero set memory function ······ 1-16
  - Searching a recording by date ······ 1-16
  - Searching for a photo – Photo search/Photo scan ······ 1-17
- Editing on Other Equipment ······ 1-17
  - Dubbing a tape ······ 1-17
- Flash Memory Operations (DCR-TRV510/TRV510E only)
  - Using the flash memory function – introduction ······ 1-18
  - Recording still images in the built-in flash memory – Memory photo recording ······ 1-19
  - Recording an image from a recorded tape as a still image ·· 1-20
  - Copying still images from a recorded tape – PHOTO SAVE · 1-21
  - Viewing a still picture – Memory photo playback ······ 1-21
  - Playing back images in a continuous loop – SLIDE SHOW · 1-23
  - Preventing accidental erasure – PROTECT ······ 1-23
  - Deleting images – DELETE ······ 1-23
- Customizing Your Camcorder ······ 1-24
  - Changing the MENU settings ······ 1-24
  - Resetting the date and time ······ 1-26
- Additional Information ······ 1-26
  - Digital8 system, recording and playback ······ 1-26
  - Changing the lithium battery in your camcorder ······ 1-27
  - Troubleshooting ······ 1-27
  - Self-diagnosis display ······ 1-28
  - Warning indicators and messages ······ 1-29
  - Using your camcorder abroad ······ 1-29
  - Maintenance information and precautions ······ 1-29
- Quick Reference ······ 1-30
  - Identifying the parts and controls ······ 1-30
  - Quick Function Guide ······ 1-33

2. DISASSEMBLY

2-1. LCD Unit, PD-106 Board ······ 2-2
2-2. Front Panel Assembly, Cabinet (R) Assembly ······ 2-3
2-3. PC-72 Board (TRV510/TRV510E) ······ 2-3
2-4. MA-356 Board ······ 2-3
2-5. Mechanism Deck ······ 2-4
2-6. EVF Block Assembly ······ 2-5
2-7. CF-64 Board ······ 2-5
2-8. VF-126 Board ······ 2-6
2-9. Lens Block ······ 2-7
2-10. Mechanism Deck, VC-213, DD-117, PJ-97 Boards ······ 2-8
2-11. Circuit Boards Location ······ 2-10
2-12. Flexible Boards Location ······ 2-11

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram (1) ······ 3-1
3-2. Overall Block Diagram (2) ······ 3-4
3-3. Power Block Diagram (1) ······ 3-7
3-4. Power Block Diagram (2) ······ 3-10

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. Frame Schematic Diagram-1 ······ 4-1
Frame Schematic Diagram-2 ······ 4-5
4-2. Printed Wiring Boards and Schematic Diagrams ······ 4-9
- CD-212 (CCD Imager) Printed Wiring Board and Schematic Diagram ······ 4-10
- CD-213 (CCD Imager) Printed Wiring Board and Schematic Diagram ······ 4-13
- VC-213 (Camera Processor)(1/13) Schematic Diagram 4-15
- VC-213 (Y/C Processor)(2/13) Schematic Diagram ······ 4-18
- VC-213 (Lens Motor Drive)(3/13) Schematic Diagram ······ 4-21
- VC-213 (I/O SEL, IR, BBI)(4/13) Schematic Diagram ······ 4-25
- VC-213 (VFD)(5/13) Schematic Diagram ······ 4-29
- VC-213 (SFD, TFD, LIP)(6/13) Schematic Diagram ······ 4-33
- VC-213 (TRX, TRF, TRW)(7/13) Schematic Diagram ······ 4-35
- VC-213 (8mm PB RF AMP, D/A Converter)(8/13) Schematic Diagram ······ 4-40
- VC-213 (8mm AFM Processor)(9/13) Schematic Diagram ······ 4-43
- VC-213 (8mm Mechanism Control)(10/13) Schematic Diagram ······ 4-49
- VC-213 (DV Mechanism Control)(11/13) Schematic Diagram ······ 4-51
- FP-249 (S/T Reel Sensor), FP-356 (Top Sensor), FP-355 (Tape LED) Flexible Board ······ 4-55
- VC-213 (Servo)(12/13) Schematic Diagram ······ 4-56

• VC-213 (HI Control)(13/13)
Schematic Diagram ········ 4-59
• VC-213 (Camera Processor, Y/C Processor, Lens Motor Drive, IN/OUT Select, IR Transmitter, Base Band Input, VFD, SFD, TFD, LIP, TRX, TRF, TRW, 8mm PB RF AMP, D/A Converter, 8mm AFM Processor, 8mm Mechanism Control, DV Mechanism Control, Servo, HI Control)
Printed Wiring Board ········ 4-65
• SE-88 (Steady Shot), PJ-97 (AV IN/OUT)
Printed Wiring Boards ········ 4-70
• SE-88 (Steady Shot), PJ-97 (AV IN/OUT)
Schematic Diagrams ········ 4-71
• MA-356 (Stereo MIC AMP)
Printed Wiring Board ········ 4-75
• MA-356 (Stereo MIC AMP)
Schematic Diagram ········ 4-77
• CF-64 (User Control)
Printed Wiring Board 4-80
• CF-64 (User Control)
Schematic Diagram ········ 4-83
• PC-72 (JPEG, Honey, Shutter, D/D Conv., Interface, Flash Memory)
Printed Wiring Board 4-86
• PC-72 (Honey, JPEG)(1/3)
Schematic Diagram ········ 4-89
• PC-72 (Digital Still Cont, Flash Memory)(2/3)
Schematic Diagram ········ 4-93
• PC-72 (D/D Conv., Interface)(3/3)
Schematic Diagram ········ 4-97
• PD-106 (RGB Decoder, LCD, Timing Generator, Back Light Drive)
Printed Wiring Board ········ 4-100
• PD-106 (RGB Decoder, LCD)(1/2)
Schematic Diagram ········ 4-103
• PD-106 (Timing Generator, Back Light Drive)(2/2)
Schematic Diagram ········ 4-106
• FK-8500, SS-8500 (Control Switch Block)
Schematic Diagram ········ 4-109
• VF-126 (Color EVF)
Printed Wiring Board 4-111
• VF-126 (Color EVF)
Schematic Diagram ········ 4-117
• DD-117 (DC/DC Converter)
Printed Wiring Board ········ 4-119
• DD-117 (DC/DC Converter)
Schematic Diagram ········ 4-121

5. ADJUSTMENTS

1. Before starting adjustment ········ 5-1
1-1. Adjusting items when replacing main parts and boards ·· 5-2
5-1. CAMERA SECTION ADJUSTMENT ········ 5-4
1-1. Preparations before Adjustment (Camera Section) ········ 5-4
1-1-1. List of Service Tools ········ 5-4
1-1-2. Preparations ········ 5-5
1-1-3. Precaution ········ 5-7
1. Setting the Switch ········ 5-7
2. Order of Adjustments ········ 5-7
3. Subjects ········ 5-7
1-2. Initialization of C, D, E, F Page Data ········ 5-8
1-2-1. Initialization of C Page Data ········ 5-8
1. Initializing the C Page Data ········ 5-8
2. Modification of C Page Data ········ 5-8
3. C Page Table ········ 5-8
1-2-2. Initialization of D Page Data ········ 5-10
1. Initializing the D Page Data ········ 5-10
2. Modification of D Page Data ········ 5-10
3. D Page Table ········
1-2-3. Initialization of B Page Data
(DCR-TRV510/TRV510E) ········ 5-1
1. Initializing the B Page Data ········ 5-1
2. Modification of B Page Data ········ 5-12
3. B Page Table ········
1-2-4. Initialization of E, F Page Data ········ 5-14
1. Initializing the E, F Page Data ········ 5-14
2. Modification of E, F Page Data ········ 5-14
3. F Page Table ········
4. E Page Table ········
1-3. Camera System Adjustments ········ 5-2
1. HALL Adjustment ········ 5
2. Flange Back Adjustment (Using Minipattern Box) ········ 5-21
3. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away) ········ 5-22
3-1. Flange Back Adjustment (1) ········ 5-2
3-2. Flange Back Adjustment (2) ········ 5-2
4. Flange Back Check ········ 5
5. Picture Frame Setting ········ 5-
6. AGC Gain Calibration Adjustment ········ 5-24
7. Color Reproduction Adjustment ········ 5-25
8. IRIS IN/OUT Adjustment ········ 5-2
9. Auto White Balance Standard Data Input ········ 5-27
10. Auto White Balance Adjustment ········ 5-27
11. White Balance Check ········ 5-
12. Angular Velocity Sensor Sensitivity Data Check ········ 5-29
1-4. Color Electronic Viewfinder System Adjustments ········ 5-30
1. EVF Initial Data Input ········ 5-
2. VCO Adjustment (VF-126 board) ········ 5-31
3. Bright Adjustment (VF-126 board) ········ 5-31
4. Contrast Adjustment (VF-126 board) ········ 5-32
5. Backlight Consumption Current Adjustment
(VF-126 board) ········
6. White Balance Adjustment (VF-126 board) ········ 5-33
1-5. LCD System Adjustments ········ 5-3
1. LCD Initial Data Input (1) ········ 5-3
2. LCD Initial Data Input (2) ········ 5-3
3. VCO Adjustment (PD-106 board) ········ 5-35
4. D range Adjustment (PD-106 board) ········ 5-35
5. Bright Adjustment (PD-106 board) ········ 5-36
6. Contrast Adjustment (PD-106 board) ········ 5-36
7. V-COM Level Adjustment (PD-106 board) ········ 5-37
8. Color Adjustment (PD-106 board) ········ 5-37
9. V-COM Adjustment (PD-106 board) ········ 5-38
10. White Balance Adjustment (PD-106 board) ········ 5-38
5-2. MECHANISM SECTION ADJUSTMENT ········ 5-39
2-1. Hi8/Standard 8mm Mode ········ 5-3
2-1-1. Operating Without Cassette ········ 5-3
2-1-2. Tape Path Adjustment ········ 5-
1. Preparations for Adjustment ········ 5-3
2-2. Digital8 Mode ········
2-2-1. How to Enter Record Mode Without Cassette ········ 5-40
2-2-2. How to Enter Playback Mode Without Cassette ········ 5-40
2-2-3. Overall Tape Path Check ········ 5-4
1. Recording of the tape path check signal ········ 5-40
2. Tape path check ········
5-3. VIDEO SECTION ADJUSTMENT ········ 5-41
3-1. Preparations Before Adjustments ········ 5-41
3-1-1. Equipment to Required ········ 5-
3-1-2. Precautions on Adjusting ········ 5-4
3-1-3. Adjusting Connectors ········ 5-
3-1-4. Connecting the Equipment ········ 5-4
3-1-5. Alignment Tape ········
3-1-6. Input/Output Level and Impedance ········ 5-45
3-2. System Control System Adjustment ········ 5-46
1. Initialization of B, C, D, E, F Page Data ········ 5-46

2. Battery End Adjustment (VC-213 board) 5-46
3-3. Servo and RF System Adjustments 5-47
1. PLL f_0 & LPF f_0 Pre-adjustment (VC-213 board) 5-47
2. Switching Position Adjustment (VC-213 board) 5-47
3. AGC Center Level Adjustment (VC-213 board) 5-48
4. APC & AEQ Adjustment (VC-213 board) 5-48
5. PLL f_0 & LPF f_0 Final Adjustment (VC-213 board) 5-49
6. Hi8/standard 8mm Switching Position Adjustment (VC-213 board) 5-49
7. CAP FG Offset Adjustment (VC-213 board) 5-50
3-4. Video System Adjustments 5-51
3-4-1. Video System Adjustments 5-51
1. 27 MHz/36 MHz Origin Oscillation Adjustment (VC-213 board) 5-51
2. Chroma BPF f_0 Adjustment (VC-213 board) 5-51
3. S VIDEO OUT Y Level Adjustment (VC-213 board) 5-52
4. S VIDEO OUT Chroma Level Adjustment (VC-213 board) 5-52
5. VIDEO OUT Y, Chroma Level Check (VC-213 board) 5-53
6. Hi8/standard 8mm 14 MHz Origin Oscillation Adjustment (VC-213 board) 5-53
7. BBI PLL Adjustment (VC-213 board) 5-54
8. Hi8/standard 8mm Y Level Adjustment (VC-213 board) 5-54
9. Hi8/standard 8mm Chroma Level Adjustment (VC-213 board) 5-55
10. Hi8/standard 8mm AFC f_0 Adjustment (VC-213 board) 5-55
11. Hi8/standard 8mm RP Filter f_0 Adjustment (VC-213 board) 5-56
3-4-2. BIST Check 5-57
1. Playback System Check 5-57
1-1. Preparation for Playback 5-57
1-2. IC104 (TRX) BIST (PB) Check 5-57
1-3. IC302 (TFD) BIST (PB) Check 5-57
1-4. IC301 (SFD) BIST (PB) Check 5-57
1-5. IC351 (VFD) BIST (PB) Check 5-58
2. Recording System Check 5-59
2-1. Preparations for Recording 5-59
2-2. IC351 (VFD) BIST (REC) Check 5-59
2-3. IC301 (SFD) BIST (REC) Check 5-59
2-4. IC302 (TFD) BIST (REC) Check 5-60
2-5. IC104 (TRX) BIST (REC) Check 5-60
3-5. IR Transmitter Adjustments 5-61
1. IR Video Carrier Frequency Adjustment (VC-213 board) 5-61
2. IR Video Deviation Adjustment (VC-213 board) 5-61
3. IR Audio Deviation Adjustment (VC-213 board) 5-62
3-6. Audio System Adjustment 5-63
1. Hi8/standard 8mm AFM BPF f_0 Adjustment (VC-213 board) 5-63
2. Hi8/standard 8mm AFM 1.5 MHz Deviation Adjustment (VC-213 board) 5-64
3. Hi8/standard 8mm AFM 1.7 MHz Deviation Adjustment (VC-213 board) 5-64
4. Digital8 Playback Level Check 5-64
5. Overall Level Characteristics Check 5-64
6. Overall Distortion Check 5-64
7. Overall Noise level Check 5-65
8. Overall Separation Check 5-65
5-4. SERVICE MODE 5-66
4-1. Adjustment Remote Commander 5-66
1. Using the Adjustment Remote Commander 5-66
2. Precautions Upon Using the Adjustment Remote Commander 5-66
4-2. Data Process 5-67
4-3. Service Mode 5-68
1. Setting the Test Mode 5-68
2. Emergence Memory Address 5-68
2-1. C Page Emergence Memory Address 5-68
2-2. F Page Emergence Memory Address 5-69
2-3. EMG Code (Emergency Code) 5-69
2-4. MSW Code 5-70
3. Bit Value Discrimination 5-71
4. Input/Output Check 5-71
5. LED, LCD (Display Window) Check 5-71
6. Record of Use Check 5-72
7. Switch Check (1) 5-72
8. Switch Check (2) 5-73
9. Audio (L) Jack Check 5-73
10. Headphone Jack Check 5-73

6. REPAIR PARTS LIST

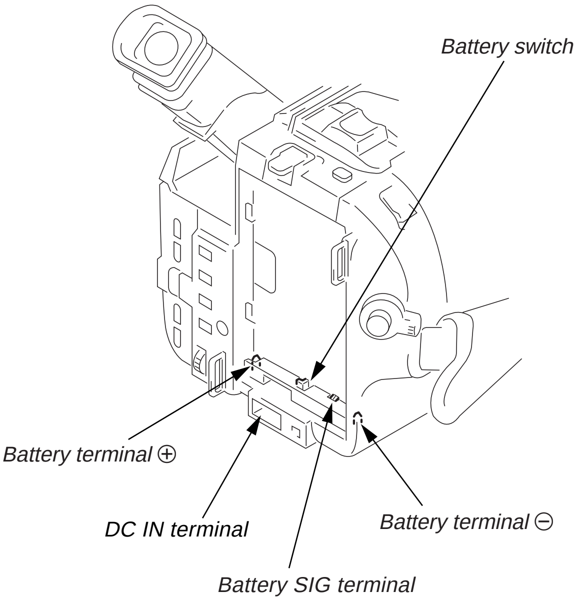
6-1. Exploded Views 6-1
6-1-1. Front Panel (N4) and Battery Panel (P) Block Assembly 6-1
6-1-2. Cabinet (R) Block Assembly 6-2
6-1-3. LCD Block Assembly 6-3
6-1-4. Cabinet (L) Block and Main Boards Assembly 6-4
6-1-5. EVF and Lens Block Assembly 6-5
6-1-6. Cassette Compartment Assembly 6-6
6-1-7. LS Chassis Assembly 6-7
6-1-8. Mechanism Chassis Assembly 6-8
6-2. Electrical Parts List 6-9

* The color reproduction frame is shown on page 305.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied (8.4V) to the battery terminal using the service power cord (J-6082-223-A), the power is shut off so that the unit cannot operate.
This following three methods are available to prevent this. Take note of which to use during repairs.


Battery switch
Battery terminal ⊕
DC IN terminal
Battery terminal ⊖
Battery SIG terminal

Method 1.

Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the remote commander switch to the “ADJ” side.

Method 2.

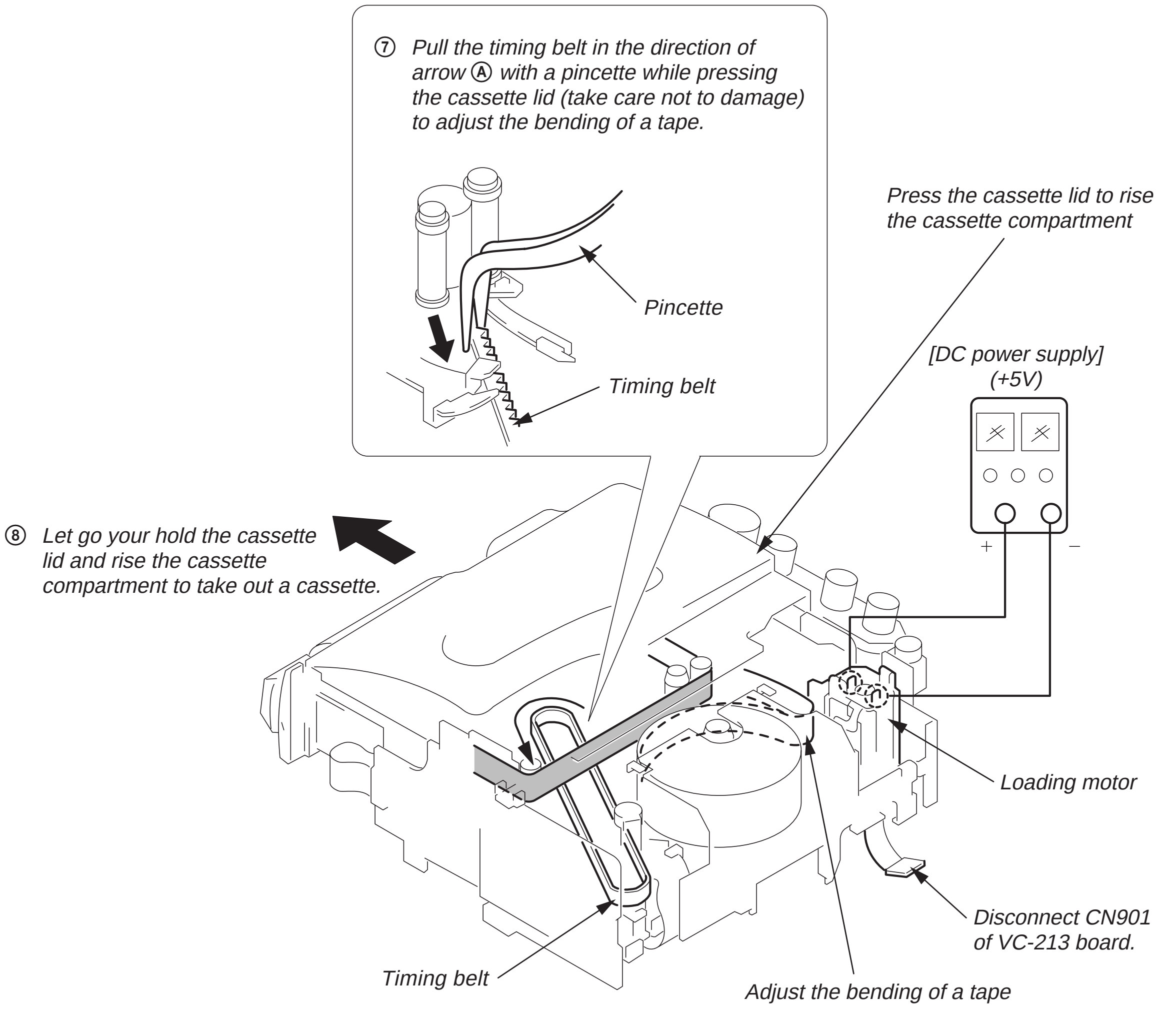
Press the battery switch of the battery terminal using adhesive tape, etc.

Method 3.

Use the DC IN terminal. (Use the AC power adaptor.)

2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to 2-2. to remove the front panel assembly.
② Refer to 2-2. to remove the cabinet (R) assembly.
③ Refer to 2-5. to remove the battery panel assembly.
④ Refer to 2-5. to remove the cabinet (L) assembly.
⑤ Disconnect CN901 of VC-213 board.
⑥ Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette lid.



⑦ *Pull the timing belt in the direction of arrow Ⓐ with a pincette while pressing the cassette lid (take care not to damage) to adjust the bending of a tape.*

⑧ *Let go your hold the cassette lid and rise the cassette compartment to take out a cassette.*

Pincette
Timing belt
Press the cassette lid to rise the cassette compartment
[DC power supply] (+5V)
+
−
Loading motor
Disconnect CN901 of VC-213 board.
Timing belt
Adjust the bending of a tape

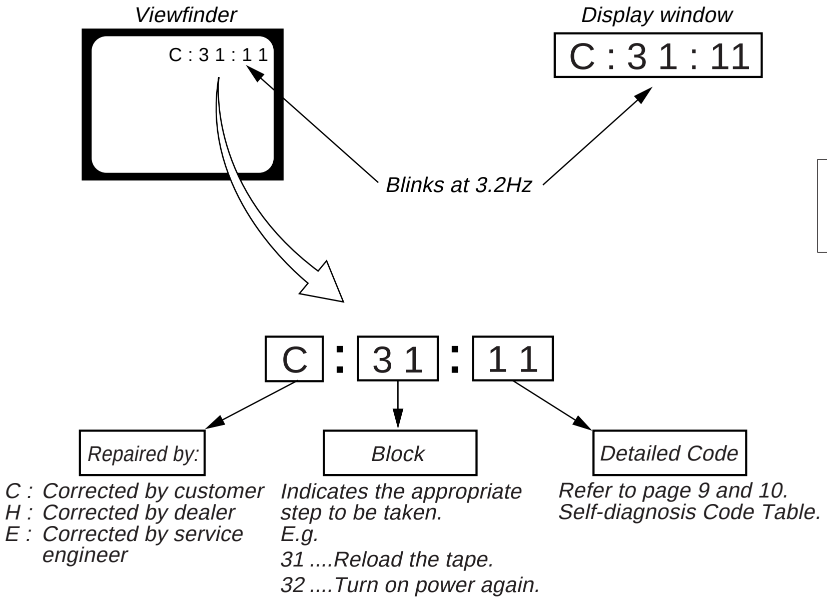
SELF-DIAGNOSIS FUNCTION

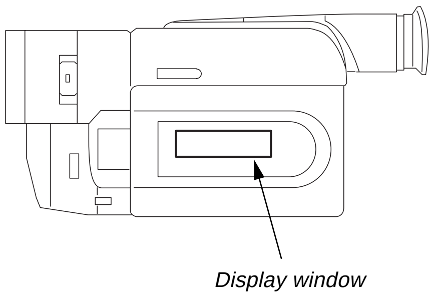
1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or Display window what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.

2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the viewfinder or Display window shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.


Viewfinder
C : 3 1 : 1 1
Display window
C : 3 1 : 11
Blinks at 3.2Hz
C : 3 1 : 1 1
Repaired by:
Block
Detailed Code
C : Corrected by customer
H : Corrected by dealer
E : Corrected by service engineer
Indicates the appropriate step to be taken.
E.g.
31 ....Reload the tape.
32 ....Turn on power again.
Refer to page 9 and 10.
Self-diagnosis Code Table.

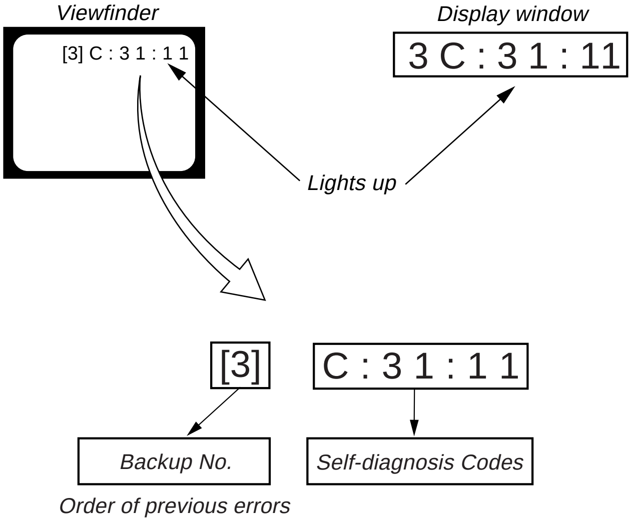

Display window

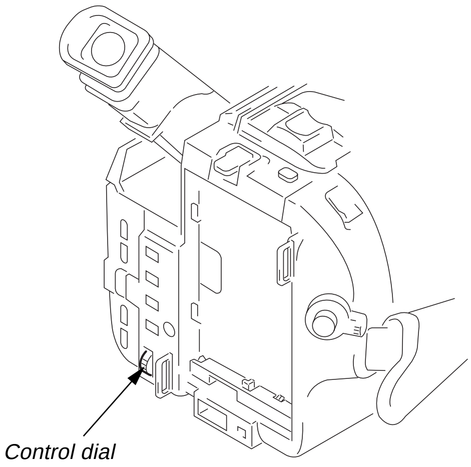
3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the "STOP" key, set the switch from OFF to "VTR or PLAYER", and continue pressing the "STOP" key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.


Viewfinder
[3] C : 3 1 : 1 1
Display window
3 C : 3 1 : 11
Lights up
[3]
C : 3 1 : 1 1
Backup No.
Self-diagnosis Codes
Order of previous errors


Control dial

3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1] : Occurred first time	[4] : Occurred fourth time
[2] : Occurred second time	[5] : Occurred fifth time
[3] : Occurred third time	[6] : Occurred the last time

3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The "self-diagnosis display" data will be backed up by the coin-type lithium battery (CF-64 board BH001). When this coin-type lithium battery is disconnected, the "self-diagnosis display" data will be lost by initialization.

4. Self-diagnosis Code Table

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
C	21	00	Condensation.	Remove the cassette, and insert it again after one hour.
C	22	00	Video head is dirty.	Clean with the optional cleaning cassette.
C	23	00	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	31	10	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	31	11	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	31	20	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	31	21	S reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	31	22	T reel fault.	Load the tape again, and perform operations from the beginning.
C	31	23	S reel fault.	Load the tape again, and perform operations from the beginning.
C	31	30	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	31	31	FG fault during normal capstan operations.	Load the tape again, and perform operations from the beginning.
C	31	40	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	31	41	PG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	31	42	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	31	43	PG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	31	44	Phase fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	32	10	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	11	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	20	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	21	S reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	22	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	23	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	30	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	31	FG fault during normal capstan operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	40	FG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	41	PG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	42	FG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	43	PG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	32	44	Phase fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑫ of CN551 of VC-213 board) when focusing is performed when the control dial is rotated in the focus manual mode and the focus motor drive circuit (IC551 of VC-213 board) when the focusing is not performed.
E	6 1	1 0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ⑭ of CN551 of VC-213 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC551 of VC-213 board) when zooming is not performed.
E	6 2	0 0	Handshake correction function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE651 of SE-88 board) peripheral circuits.
E	6 2	0 1	Handshake correction function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE652 of SE-88 board) peripheral circuits.

SECTION 1
GENERAL

This section is extracted from instruction manual. (DCR-TRV410E/TRV510E model)

English

Welcome!

Congratulations on your purchase of this Sony Digital Handycam camcorder. With your Digital Handycam you can capture life's precious moments with superior picture and sound quality.
Your Digital Handycam is loaded with advanced features, but at the same time it is very easy to use. You will soon be producing home video that you can enjoy for years to come.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet.
Refer servicing to qualified personnel only.

NOTICE ON THE SUPPLIED AC POWER ADAPTOR FOR CUSTOMERS IN THE UNITED KINGDOM

A moulded plug complying with BS1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS1362 (i.e., marked with ㊫ or ♡ mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

For the customers in Germany

Directive: EMC Directive 89/336/EEC.
92/31/EEC

This equipment complies with the EMC regulations when used under the following circumstances:
- Residential area
- Business district
- Light-industry district

(This equipment complies with the EMC standard regulations EN55022 Class B.)

ATTENTION

The electromagnetic fields at the specific frequencies may influence the picture and sound of this digital camcorder.

Русский

Добро пожаловать!

Поздравляем Вас с приобретением данной видеокамеры Digital Handycam фирмы Sony. С помощью Вашей видеокамеры Digital Handycam Вы сможете запечатлеть дорогие Вам мгновения жизни с превосходным качеством изображения и звука.
Ваша видеокамера Digital Handycam оснащена усовершенствованными функциями, но в то же время ее очень легко использовать. Вскоре Вы будете создавать семейные видеопрограммы, которыми можете наслаждаться последующие годы.

ПРЕДУПРЕЖДЕНИЕ

Для предотвращения возгорания или опасности электрического удара не выставляйте аппарат на дождь или влагу.

Во избежание поражения электрическим током не открывайте корпус.
За обслуживанием обращаться только к квалифицированному обслуживающему персоналу.

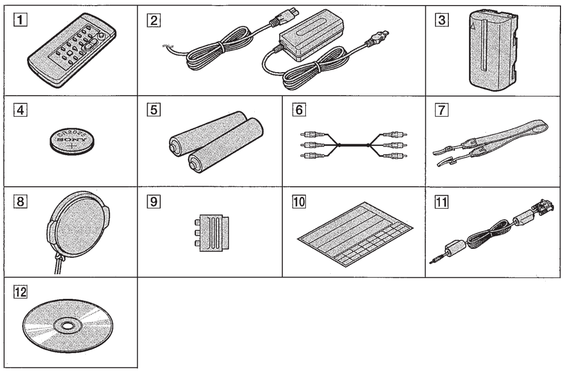
ВНИМАНИЕ

Электромагнитные поля на определенных частотах могут влиять на изображение и звчк, воспроизводимое данной цифровой видеокамеры.

АЯ46

Checking supplied accessories

Make sure that the following accessories are supplied with your camcorder.



1. **Wireless Remote Commander** (1) (p. 143)
2. **AC-L10A/L10B/L10C AC power adaptor** (1), **Mains lead** (1) (p. 13)
3. **NP-F330 battery pack** (1) (p. 12, 13)
4. **CR2025 lithium battery** (1) (p. 116)
   The lithium battery is already installed in your camcorder.
5. **R6 (size AA) battery for Remote Commander** (2) (p. 144)
6. **A/V connecting cable** (1) (p. 40)
7. **Shoulder strap** (1) (p. 141)
8. **Lens cap** (1) (p. 22)
9. **21-pin adaptor** (1) (p. 41)
10. **Label sheet for cassette** (1)
    Stick this label on the recorded cassette.
11. **PC serial cable** (1) (p. 92)
    DCR-TRV510E only
12. **Application software: PictureGear 3.2Lite** (p. 92)
    DCR-TRV510E only

Проверка прилагаемых принадлежностей

Убедитесь, что следующие принадлежности прилагаются к Вашей видеокамере.

1. **Беспроводный пульт дистанционного управления** (1) (стр. 143)
2. **Сетевой адаптер переменного тока AC-L10A/L10B/L10C** (1), **провод электропитания** (1) (стр. 13)
3. **Батарейный блок NP-F330** (1) (стр. 12, 13)
4. **Литиевая батарейка CR2025** (1) (стр. 116)
   Литиевая батарейка уже установлена в Вашей видеокамере.
5. **Батарейка R6 (размера AA) для пульта дистанционного управления** (2) (стр. 144)
6. **Соединительный кабель аудио/видео** (1) (стр. 40)
7. **Плечевой ремень** (1) (стр. 141)
8. **Крышка объектива** (1) (стр. 22)
9. **21-штырьковый адаптер** (1) (стр. 41)
10. **Этикетка для кассеты** (1)
    Наклейте эту этикетку на кассету с записью.
11. **PC-шнур последовательного соединения** (1) (стр. 92)
    Только модель DCR-TRV510E
12. **Прикладное программное обеспечение: PictureGear 3.2Lite** (стр. 92)
    Только модель DCR-TRV510E

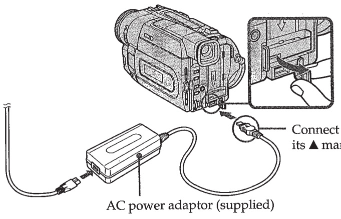
English

Quick Start Guide

This chapter introduces you to the basic features of your camcorder. See the page in parentheses "( )" for more information.

1 Connecting the mains lead (p. 18)

Use the battery pack when using your camcorder outdoors (p. 12).



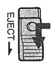
Open the DC IN jack cover.

Connect the plug with its ▲ mark facing up.

AC power adaptor (supplied)

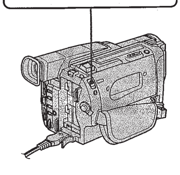
2 Inserting a cassette (p. 20)

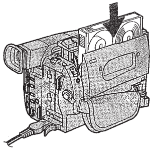
❶ Slide EJECT in the direction of the arrow while pressing the small blue button.

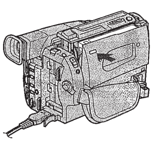


❷ Insert a cassette into the cassette compartment with its window facing out.

❸ Close the cassette compartment by pressing the "PUSH" mark on the cassette compartment. The cassette compartment automatically goes down.



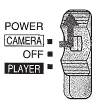


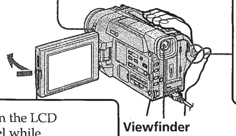


3 Recording a picture (p. 22)

❶ Remove the lens cap.

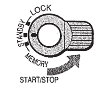
❷ Set the POWER switch to CAMERA while pressing the small green button.



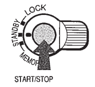


❸ Open the LCD panel while pressing OPEN.

❹ Turn STANDBY to STANDBY. The picture appears on the LCD screen.



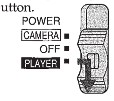
❺ Press the red button. Your camcorder starts recording. To stop recording, press the red button again.



Viewfinder
When the LCD panel is closed, use the viewfinder placing your eye against its eyecup.

4 Monitoring the playback picture on the LCD screen (p. 35)

❶ Set the POWER switch to PLAYER while pressing the small green button.

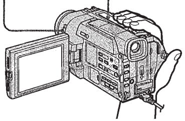


❷ Press ◀◀ to rewind the tape.

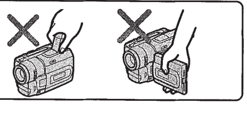
REW◀◀

❸ Press ► to start playback.

PLAY ▷



NOTE
Do not pick up your camcorder by holding the viewfinder or by holding the LCD panel.



— Getting started —

Using this manual

The instructions in this manual are for the two models listed in the table below. Before you start reading this manual and operating your camcorder, check the model number by looking at the bottom of your camcorder. The DCR-TRV510E is the model used for illustration purposes. Otherwise, the model name is indicated in the illustrations. Any differences in operation are clearly indicated in the text, for example, "DCR-TRV510E only."

As you read through this manual, buttons and settings on your camcorder are shown in capital letters.
e.g. Set the POWER switch to CAMERA.
When you carry out an operation, you can hear a beep sound to indicate that the operation is being carried out.

Types of differences

DCR-	TRV410E	TRV510E
Built-in flash memory	–	●

Before using your camcorder

With your digital camcorder, you can use Hi8 video cassettes **Hi8**.
Your camcorder records and plays back pictures in Digital8 Ð system. Also, your camcorder plays back tapes recorded in the Hi8 **Hi8**/standard 8 **8** (analog) system. You, however, cannot use the functions in "Advanced Playback Operations" on page 64 to 71 for playback in the Hi8 **Hi8**/standard 8 **8** system. To enable smooth transition, we recommend that you do not mix pictures recorded in the Hi8 **Hi8**/standard 8 **8** with the Digital8 Ð system on a tape.

Note on TV colour systems

TV colour systems differ from country to country. To view your recordings on a TV, you need a PAL system-based TV.

— Подготовка к эксплуатации —

Использование данного руководства

Инструкция в данном руководстве распространяется на две модели, перечисленные в приведенной ниже таблице. Перед тем, как Вы начнете чтение данного руководства и эксплуатацию Вашей видеокамеры, проверьте номер модели с нижней стороны Вашей видеокамеры. DCR-TRV510E является моделью, используемой для иллюстративных целей. В других случаях, название указано на рисунке. Какие-либо отличия в эксплуатации четко указаны в тексте, например, "только модель DCR-TRV510E".

При чтении данного руководства учитывайте, что кнопки и установки на видеокамере показаны заглавными буквами.
Прим. Установите выключатель POWER в положение CAMERA.
При выполнении операции на видеокамере Вы сможете услышать зуммерный сигнал, подтверждающий выполнение операции.

Типы отличий

DCR-	TRV410E	TRV510E
Встроенная флэш-память	–	●

Перед началом эксплуатации Вашей видеокамеры

Для Вашей цифровой видеокамеры Вы можете использовать видеокассеты Hi8 **Hi8**. Ваша видеокамера записывает и воспроизводит изображения в цифровой системе Digital8 Ð. Также, Ваша видеокамера воспроизводит ленты, записанные в системе Hi8 **Hi8**/стандартной (аналоговой) системе 8 **8**. Однако, Вы не можете использовать функции в разделе "Усовершенствованные операции воспроизведения" на страницах с 64 по 71 для воспроизведения в системе Hi8 **Hi8**/стандартной системе 8 **8**. Для обеспечения плавного перехода рекомендуется не смешивать на ленте изображения, записанные в системе Hi8 **Hi8**/стандартной системе 8 **8**, с изображениями, записанными в цифровой системе Digital8 Ð.

Примечание по системам цветного телевидения

Системы цветного телевидения отличаются в зависимости от страны. Для просмотра Ваших записей на экране телевизора Вам необходимо использовать телевизор, основанный на системе PAL.

Copyright precautions

Television programmes, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Precautions on camcorder care

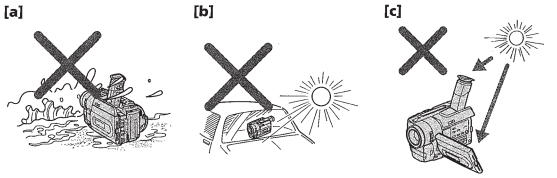
- **The LCD screen and/or the colour viewfinder are manufactured using high-precision technology. However, there may be some tiny black spots and/or bright spots (red, blue or green in colour) that constantly appear on the LCD screen and/or in the colour viewfinder. These spots occur normally in the manufacturing process and do not affect the recorded picture in any way. Effective number of pixels is 99.99% or more.**
- Do not let your camcorder get wet. Keep your camcorder away from rain and sea water. Letting your camcorder get wet may cause your camcorder to malfunction. Sometimes this malfunction cannot be repaired **[a]**.
- Never leave your camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight **[b]**.
- Do not place your camcorder so as to point the viewfinder or the LCD screen toward the sun. The inside of the viewfinder or LCD screen may be damaged **[c]**.

Предостережение об авторском праве

Телевизионные программы, кинофильмы, видеоленты и другие материалы могут быть защищены авторским правом.
Нелицензированная запись таких материалов может противоречить положениям закона об авторском праве.

Меры предосторожности при уходе за видеокамерой

- **Экран ЖКД и/или цветной видоискатель изготовлены с помощью высокопрецизионной технологии. Однако на экране ЖКД и/или в видоискателе могут постоянно появляться черные или яркие цветные точки (красные, синие или зеленые). Появление этих точек вполне нормально для процесса съемки и никоим образом не влияет на записываемое изображение. Свыше 99,99% экрана предназначено для эффективного использования.**
- Не допускайте, чтобы видеокамера становилась влажной. Предохраняйте видеокамеру от дождя и морской воды. Если Вы намочите видеокамеру, то это может привести к неисправности аппарата, которая не всегда может быть устранена **[a]**.
- Никогда не оставляйте видеокамеру в месте с температурой выше 60°C (140°F), как, например, в автомобиле, оставленном на солнце или под прямым солнечным светом **[b]**.
- Не располагайте свою видеокамеру таким образом, чтобы видоискатель или экран ЖКД были направлены на солнце. Иначе может быть повреждено внутреннее устройство видоискателя или экрана ЖКД **[c]**.



Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, video tape, etc.

Содержание записи не может быть компенсировано в случае, если запись или воспроизведение не выполнены из-за неисправности видеокамеры, видеоленты и т.п.

Step 1 Preparing the power supply

Installing the battery pack

Install the battery pack to use your camcorder outdoors.

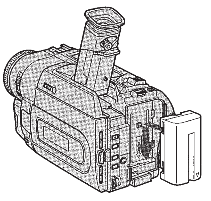
Slide the battery pack down.

Пункт 1 Подготовка источника питания

Установка батарейного блока

Установите батарейный блок для того, чтобы использовать Вашу видеокамеру вне помещения.

Передвиньте батарейный блок вниз.

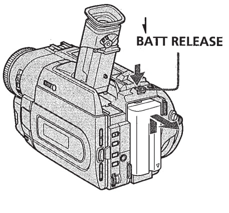


To remove the battery pack

Slide the battery pack out in the direction of the arrow while pressing ↓ BATT RELEASE down.

Для снятия батарейного блока

Передвиньте батарейный блок в направлении стрелки, нажав кнопку ↓ BATT RELEASE вниз.



After installing the battery pack
Do not carry your camcorder by holding the battery pack. If you do so, the battery pack may slide off your camcorder unintentionally, damaging your camcorder.

После установки батарейного блока
Не переносите свою видеокамеру, взявшись за батарейный блок. Если Вы так сделаете, батарейный блок может непроизвольно соскользнуть с Вашей видеокамеры и повредить ее.

Charging the battery pack

Use the battery pack after charging it for your camcorder.
Your camcorder operates only with the "InfoLITHIUM" battery pack (L series).

"InfoLITHIUM" is a trademark of Sony Corporation.

(1) Open the DC IN jack cover and connect the AC power adaptor supplied with your camcorder to the DC IN jack with the plug's ▲ mark facing up.
(2) Connect the mains lead to the AC power adaptor.
(3) Connect the mains lead to the mains.
(4) Set the POWER switch to OFF. Charging begins. The remaining battery time is indicated in minutes on the display window.

When the remaining battery indicator changes to ▬, **normal charge** is completed. To fully charge the battery **(full charge)**, leave the battery pack attached for about 1 hour after normal charge is completed until FULL appears in the display window. Fully charging the battery allows you to use the battery longer than usual.

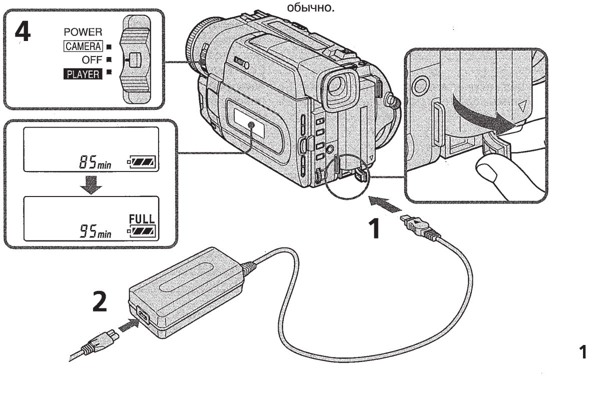
Зарядка батарейного блока

Используйте батарейный блок для Вашей видеокамеры после его зарядки.
Ваша видеокамера работает только с батарейным блоком "InfoLITHIUM" (серии L).

"InfoLITHIUM" является фирменным знаком корпорации Sony.

(1) Откройте крышку гнезда DC IN и подсоедините сетевой адаптер переменного тока, прилагаемый к Вашей видеокамере, к гнезду DC IN, так чтобы штекер ▲ был направлен вверх.
(2) Подсоедините провод электропитания к сетевому адаптеру переменного тока.
(3) Подсоедините провод электропитания к сетевой розетке.
(4) Установите переключатель POWER в положение OFF. Начнется зарядка. В окошке дисплея будет отображаться время оставшегося заряда в минутах.

Если индикатор оставшегося заряда изменится на ▬, это значит, что **нормальная зарядка** завершена. Для полной зарядки батарейного блока **(полная зарядка)** оставьте батарейный блок прикрепленным на месте приблизительно на один час после завершения нормальной зарядки до тех пор, пока в окошко дисплея не появится индикация FULL. Полная зарядка батарейного блока позволяет Вам использовать батарейный блок дольше чем обычно.



Step 1 Preparing the power supply

Note
Prevent metallic objects from coming into contact with the metal parts of the DC plug of the AC power adaptor. This may cause a short-circuit, damaging the AC power adaptor.

Remaining battery time indicator
The remaining battery time indicator in the display window roughly indicates the recording time with the viewfinder.

Battery pack
The battery pack is charged a little before it leaves the factory.

Until your camcorder calculates the actual remaining battery time
"– – – – min" appears in the display window.

If there is a slight difference in shape between the plug of mains lead and the terminal of AC power adaptor.
It is ignorable for their mutual connection and power supply.

Plug the mains lead deeply
Be sure to plug the mains lead deeply into the terminal of AC power adaptor so that it is firmly locked. If there is a gap between the plug of mains lead and the terminal of AC power adaptor, it does not affect the efficiency of the AC power adaptor.

Пункт 1 Подготовка источника питания

Примечание
Не допускайте контакта металлических предметов с металлическими частями штекера постоянного тока сетевого адаптера. Это может привести к короткому замыканию и повреждению Вашей видеокамеры.

Индикатор времени оставшегося заряда батарейного блока
Индикатор времени оставшегося заряда батарейного блока в окошке дисплея приблизительно указывает время записи с помощью видоискателя.

Батарейный блок
Батарейный блок уже немного заряжен на предприятии-изготовителе.

До тех пор, пока Ваша видеокамера определит действительное время оставшегося заряда батарейного блока
В окошке дисплея будет отображаться индикация "– – – – min".

В случае отличия формы штекера провода электропитания и гнезда сетевого адаптера переменного тока
Соединение между ними и источником питания невозможно.

Подсоединяйте шнур электропитания плотно
Проверьте, чтобы штекер провода электропитания был плотно подсоединен к гнезду сетевого адаптера переменного тока. Если будет зазор между штекером провода электропитания и гнездом сетевого адаптера переменного тока, то сетевой адаптер переменного тока может не работать.

Charging time

Время зарядки

Battery pack Батарейный блок	Full charge (Normal charge) Полная зарядка (нормальная зарядка)
NP-F330 (supplied) /(прилагается)	150 (90)
NP-F530/F550	210 (150)
NP-F730/F750	300 (240)
NP-F930/F950	390 (330)

Approximate number of minutes to charge an empty battery pack

Приблизительное время в минутах для зарядки полностью разряженного батарейного блока

Step 1 Preparing the power supply

Пункт 1 Подготовка источника питания

Recording time

Время записи

DCR-TRV410E

Battery pack Батарейный блок	Recording with the viewfinder Запись с помощью видоискателя		Recording with the LCD screen Запись с помощью экрана ЖКД	
	Continuous* Непрерывная*	Typical** Типичная**	Continuous* Непрерывная*	Typical** Типичная**
NP-F330 (supplied) /(прилагается)	100 (90)	55 (50)	70 (65)	40 (35)
NP-F530	170 (155)	95 (85)	110 (100)	60 (55)
NP-F550	205 (185)	115 (105)	140 (125)	80 (70)
NP-F730	350 (310)	200 (175)	255 (230)	145 (130)
NP-F750	425 (380)	240 (215)	290 (260)	165 (150)
NP-F930	555 (500)	315 (285)	400 (360)	230 (205)
NP-F950	650 (590)	370 (335)	455 (410)	260 (235)

DCR-TRV510E

Battery pack Батарейный блок	Recording with the viewfinder Запись с помощью видоискателя		Recording with the LCD screen Запись с помощью экрана ЖКД	
	Continuous* Непрерывная*	Typical** Типичная**	Continuous* Непрерывная*	Typical** Типичная**
NP-F330 (supplied) /(прилагается)	95 (85)	50 (45)	65 (60)	35 (30)
NP-F530	160 (145)	90 (80)	105 (95)	60 (55)
NP-F550	195 (175)	110 (100)	135 (120)	75 (65)
NP-F730	325 (290)	185 (160)	245 (220)	140 (125)
NP-F750	395 (355)	225 (200)	280 (250)	160 (140)
NP-F930	515 (465)	295 (265)	385 (345)	220 (195)
NP-F950	610 (550)	340 (315)	435 (390)	250 (225)

Approximate number of minutes when you use a fully charged battery

Numbers in parentheses "(   )" indicate the time using a normally charged battery.

- * Approximate continuous recording time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.
- ** Approximate number of minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

Приблизительное время в минутах при использовании полностью заряженного батарейного блока

Числа в скобках "(   )" указывают время при использовании батарейного блока с нормальной зарядкой.

- * Приблизительное время непрерывной записи при температуре 25°C (77°F). При использовании видеокамеры в холодных условиях срок службы батарейного блока будет короче.
- ** Приблизительное время в минутах при записи с неоднократным пуском/остановкой записи, наездом видеокамеры и включением/выключением питания. Фактический срок службы заряда батарейного блока может быть короче.

Step 1 Preparing the power supply

Пункт 1 Подготовка источника питания

Playing time

Время воспроизведения

DCR-TRV410E

Battery pack Батарейный блок	Playing time on LCD screen Время воспроизведения на экране ЖКД	Playing time with LCD closed Время воспроизведения при закрытом ЖКД
NP-F330 (supplied) /(прилагается)	65 (60)	100 (90)
NP-F530	105 (95)	165 (150)
NP-F550	135 (120)	200 (180)
NP-F730	245 (220)	335 (300)
NP-F750	280 (250)	410 (365)
NP-F930	385 (345)	535 (480)
NP-F950	435 (390)	630 (570)

DCR-TRV510E

Battery pack Батарейный блок	Playing time on LCD screen Время воспроизведения на экране ЖКД	Playing time with LCD closed Время воспроизведения при закрытом ЖКД
NP-F330 (supplied) /(прилагается)	65 (55)	95 (85)
NP-F530	100 (90)	155 (140)
NP-F550	130 (115)	190 (170)
NP-F730	235 (210)	315 (285)
NP-F750	270 (240)	385 (345)
NP-F930	370 (330)	495 (450)
NP-F950	415 (370)	590 (530)

Approximate number of minutes when you use a fully charged battery

Numbers in parentheses "(   )" indicate the time using a normally charged battery. The battery life will be shorter if you use your camcorder in a cold environment.

Приблизительное время в минутах при использовании полностью заряженного батарейного блока

Цифры в скобках "(   )" указывают время при использовании батарейного блока с нормальной зарядкой. При использовании видеокамеры в холодных условиях срок службы батарейного блока будет короче.

Step 1 Preparing the power supply

After charging the battery pack
Disconnect the AC power adaptor from the DC IN jack on your camcorder.

Note on the remaining battery time indicator during recording
The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about 1 minute for the correct remaining battery time to be displayed.

What is "InfoLITHIUM"?
The "InfoLITHIUM" is a lithium ion battery pack which can exchange data such as battery consumption with compatible video equipment. This unit is compatible with the "InfoLITHIUM" battery pack (L series). Your camcorder operates only with the "InfoLITHIUM" battery. "InfoLITHIUM" battery packs have the ⓘ InfoLITHIUM mark.
"InfoLITHIUM" is a trademark of Sony Corporation.

Пункт 1 Подготовка источника питания

После зарядки батарейного блока
Отсоедините сетевой адаптер переменного тока от гнезда DC IN на Вашей видеокамере.

Примечания по индикатору времени оставшегося заряда батарейного блока во время записи
Индикатор может быть неправильным в зависимости от условий, в которых выполняется запись. Если Вы закроете панель ЖКД и откроете ее снова, то пройдет около 1 минуты, прежде чем на дисплее появится правильное время оставшегося заряда батарейного блока.

Что такое "InfoLITHIUM"?
"InfoLITHIUM" представляет собой литиево-ионный батарейный блок, который может обмениваться данными, такими как потребление заряда батарейного блока, с совместимой видеоаппаратурой. Это устройство совместимо с батарейным блоком "InfoLITHIUM" (серии L). Ваша видеокамера работает только с батарейным блоком "InfoLITHIUM". На батарейных блоках "InfoLITHIUM" имеется знак ⓘ InfoLITHIUM.
"InfoLITHIUM" является торговой маркой корпорации Sony Corporation.

Step 1 Preparing the power supply

Connecting to the mains

When you use your camcorder for a long time, we recommend that you power it from the mains using the AC power adaptor.

(1) Open the DC IN jack cover, and connect the AC power adaptor to the DC IN jack on your camcorder with the plug's ▲ mark facing up.

(2) Connect the mains lead to the AC power adaptor.

(3) Connect the mains lead to the mains.

Пункт 1 Подготовка источника питания

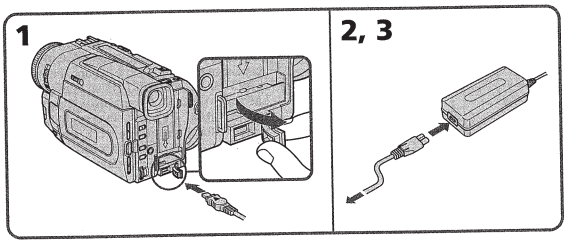
Подсоединение к сетевой розетке

Если Вы собираетесь использовать видеокамеру длительное время, рекомендуется использовать питание от электрической сети с помощью сетевого адаптера переменного тока.

(1) Откройте крышку гнезда DC IN и подсоедините сетевой адаптер переменного тока к гнезду DC IN на Вашей видеокамеру, так чтобы знак ▲ на штекере был обращен вверх.

(2) Подсоедините провод электропитания к сетевому адаптеру переменного тока.

(3) Подсоедините провод электропитания к сетевой розетке.



Step 1 Preparing the power supply

WARNING
The mains lead must only be changed at a qualified service shop.

PRECAUTION
The set is not disconnected from the AC power source (the mains) as long as it is connected to the mains, even if the set itself has been turned off.

Notes

- The AC power adaptor can supply power even if the battery pack is attached to your camcorder.
- The DC IN jack has "source priority". This means that the battery pack cannot supply any power if the mains lead is connected to the DC IN jack, even when the mains lead is not plugged into the mains.
- Keep the AC power adaptor away from the camcorder if the picture is disturbed.

Using a car battery
Use Sony DC Adaptor/Charger (not supplied).

Пункт 1 Подготовка источника питания

ВНИМАНИЕ
Провод электропитания следует заменять только в мастерской квалифицированного обслуживания.

ПРЕДОСТЕРЕЖЕНИЕ
Аппарата не отключается от источника переменного тока до тех пор, пока он подсоединен к электрической сети, даже если сам аппарат и выключен.

Примечания

- Питание от сетевого адаптера переменного тока может подаваться даже в случае, если батарейный блок прикреплен к Вашей видеокамере.
- Гнездо DC IN имеет "приоритет источника". Это значит, что питание от батарейного блока не может подаваться, если провод электропитания подсоединен к гнезду DC IN, даже если провод электропитания и не подсоединен к сетевой розетке.
- Если изображение искажено, отодвиньте сетевой адаптер переменного тока подальше от видеокамеры.

Использование автомобильного аккумулятора
Используйте адаптер/зарядное устройство постоянного тока Sony (не прилагается).

Step 2 Inserting a cassette

We recommend using Hi8 video cassettes **Hi8**.
If you use standard 8 ⑧ tape, be sure to play back the tape on this camcorder.
Your camcorder records in the Digital8 Ð system.

(1) Slide EJECT in the direction of the arrow while pressing the small blue button. The cassette compartment automatically lifts up and opens.

(2) Insert a cassette with its window facing out and the tab on the cassette up.

(3) Close the cassette compartment by pressing the "PUSH" mark on the cassette compartment. The cassette compartment automatically goes down.

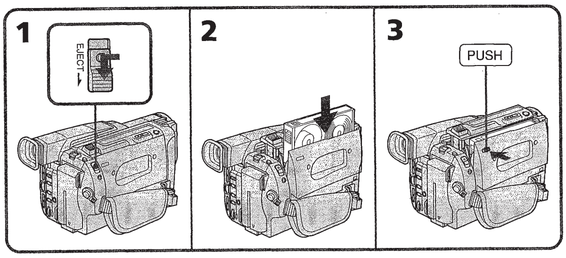
Пункт 2 Установка кассеты

Рекомендуется использовать видеокассеты типа Hi8 со знаком **Hi8**.
Если Вы используете стандартную ленту 8 ⑧, то воспроизводить ленту следует на данной видеокамере.
Ваша видеокамера выполняет запись в цифровой системе Digital8 Ð.

(1) Нажав маленькую синюю кнопку, передвиньте переключатель EJECT в направлении стрелки. Отсек для кассеты автоматически поднимется вверх и откроется.

(2) Вставьте кассету, так чтобы окошку было обращено наружу, а лепесток на кассете вверх.

(3) Закройте отсек для кассеты, нажав метку "PUSH" на отсеке. Отсек для кассеты автоматически опустится вниз.



To eject a cassette
Slide EJECT in the direction of the arrow while pressing the small blue button.

Для извлечения кассеты
Нажав маленькую синюю кнопку, передвиньте переключатель EJECT в направлении стрелки.

Step 2 Inserting a cassette

Notes

- The recording time when you use your Digital8 Ð system camcorder on Hi8/standard 8 tape is 2/3 the recording time when using the conventional Hi8/standard 8 system camcorder.
- If you use standard 8 tape, be sure to play back the tape on this camcorder. Mosaic pattern noise may appear when you play back standard 8 tape on other VCRs.
- Do not press the cassette compartment down. Doing so may cause malfunction.

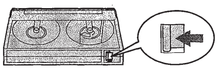
To prevent accidental erasure
Slide the write-protect tab on the cassette to expose the red mark.

Пункт 2 Установка кассеты

Примечания

- Время записи при использовании Вашей цифровой видеокамеры системы Digital8 Ð на ленте Hi8/стандартной ленте 8 составляет 2/3 времени записи в сравнении с обычной видеокамерой системы системы Hi8/стандартной системы 8.
- Если Вы используете стандартную ленту 8, то воспроизводить ленту следует на данной видеокамере. При воспроизведении стандартной ленты 8 на других КВМ могут возникнуть помехи мозаичного типа.
- Не нажимайте вниз отсек для кассеты. Это может привести к неисправности.

Для предотвращения случайного стирания
Передвиньте лепесток защиты записи на кассете, так чтобы появилась красная метка.



Recording a picture

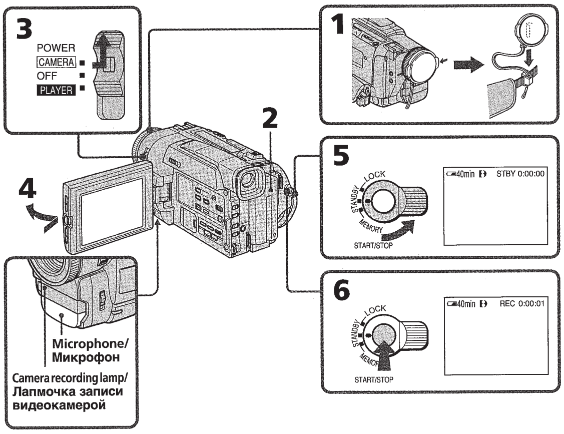
Your camcorder automatically focuses for you.

(1) Remove the lens cap by pressing both knobs on its sides and attatch the lens cap to the grip strap.
(2) Install the power source and insert a cassette. See "Step 1" and "Step 2" for more information (p. 12 to p. 21).
(3) Set the POWER switch to CAMERA while pressing the small green button.
(4) Open the LCD panel while pressing OPEN. The viewfinder automatically turns off.
(5) Turn STANDBY to STANDBY.
(6) Press START/STOP. Your camcorder starts recording. The "REC" indicator appears. The camera recording lamp located on the front of your camcorder lights up. To stop recording, press START/STOP again.

Запись изображения

Ваша видеокамера автоматически выполняет фокусировку за Вас.

(1) Снимите крышку объектива, нажав обе кнопки на ее кромке, и прикрепите крышку объектива к ремню для захвата.
(2) Установите источник питания и вставьте кассету. Подробные сведения приведены в "Пункте 1" и "Пункте 2" (стр. 12 – 21).
(3) Нажав маленькую зеленую кнопку, установите переключатель POWER в положение CAMERA.
(4) Нажав кнопку OPEN, откройте панель ЖКД. Видоискатель выключится автоматически.
(5) Поверните рычаг STANDBY в положение STANDBY.
(6) Нажмите кнопку START/STOP. Ваша видеокамера начнет запись. Появится индикатор "REC". Высветится также лампочка записи, расположенная на передней панели видеокамеры. Для остановки записи нажмите кнопку START/STOP еще раз.



Recording a picture

Note
Fasten the grip strap firmly. Do not touch the built-in microphone during recording.

To enable smooth transition
You can make the transition between the last scene you recorded and the next scene smooth as long as you do not eject the cassette. When you exchange the battery pack in the recording mode, set STANDBY to LOCK.

If you leave your camcorder in the standby mode for 3 minutes while the cassette is inserted
Your camcorder automatically turns off. This is to save battery power and to prevent battery and tape wear. To resume the standby mode, turn STANDBY down and up again. To start recording, press START/STOP.

Adjusting the LCD screen

To adjust the brightness of the LCD screen, press either of the two buttons on LCD BRIGHT.
The LCD panel moves about 90 degrees to the viewfinder side and about 210 degrees to the lens side.
If you turn the LCD panel over so that it faces the other way, the ☺ indicator appears in the viewfinder and on the LCD screen (**Mirror mode**).

Запись изображения

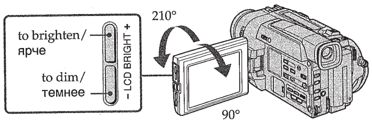
Примечание
Плотно пристегните ремень для захвата видеокамеры. Не прикасайтесь к встроенному микрофону во время записи.

Для обеспечения плавного перехода
Вы можете выполнять плавный переход между последним записанным эпизодом и следующим эпизодом до тех пор, пока не извлечете кассету. При замене батарейного блока в режиме записи установите рычаг STANDBY в положение LOCK.

Если Вы оставите Вашу видеокамеру в режиме готовности на 3 минуты при вставленной кассете
Видеокамера выключится автоматически. Это предотвращает расход заряда батарейного блока и износ ленты. Для возобновления режима готовности поверните рычаг STANDBY вниз и снова вверх. Для начала записи нажмите кнопку START/STOP.

Регулировка экрана ЖКД

Для регулировки яркости экрана ЖКД нажмите одну их кнопок на LCD BRIGHT.
Панель ЖКД может передвигаться примерно на 90 градусов в сторону видоискателя и примерно на 210 градусов в сторону объектива.
Если Вы повернете панель ЖКД так, что она будет направлена в другую сторону, в видоискателе и на экране ЖКД появится индикатор ☺ (**Зеркальный режим**).



When closing the LCD panel, set it vertically until it clicks, and swing it into the camcorder body.

При закрывании панели ЖКД установите ее вертикально, пока не раздастся щелчок, а затем присоедините ее к корпусу видеокамеры.

Recording a picture

Note
When using the LCD screen except in the mirror mode, the viewfinder automatically turns off.

When you use the LCD screen outdoors in direct sunlight
The LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

Picture in the mirror mode
The picture on the LCD is a mirror-image. However, the picture will be normal when recorded.

During recording in the mirror mode
While recording in the mirror mode, you cannot operate the following buttons:
ZERO SET MEMORY on the Remote Commander and MENU on your camcorder.

Indicators in the mirror mode
The STBY indicator appears as ❚❚● and REC as ●. Some of the other indicators appear mirror-reversed and others are not displayed.

Запись изображения

Примечание
При использовании экрана ЖКД видоискатель автоматически выключается, кроме зеркального режима.

Если Вы используете экран ЖКД вне помещения под прямым солнечным светом
Возможно будет трудно разглядеть экран ЖКД. В этом случае рекомендуется использовать видоискатель.

Изображение в зеркальном режиме
Изображение на экране ЖКД будет отображаться зеркально. Однако запись изображения будет нормальной.

Во время записи в зеркальном режиме
Вы не можете оперировать следующими кнопками:
ZERO SET MEMORY на пульте дистанционного управления и MENU на Вашей видеокамере.

Индикаторы в зеркальном режиме
Индикатор STBY появится в виде ❚❚●, а индикатор REC в виде ●. Некоторые другие индикаторы появятся в зеркально отображенном виде, а некоторые из них не будут отображаться совсем.

Recording a picture

Self-timer recording

– DCR-TRV510E only
You can make a recording with the self-timer. This mode is useful when you want to record yourself.

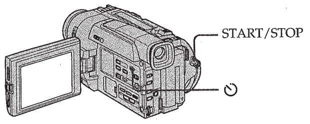
(1) Press ⏲ (self-timer).
The ⏲ (self-timer) indicator appears in the viewfinder or on the LCD screen.
(2) Press START/STOP.
Self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep sound gets faster, then recording starts automatically.

Запись изображения

Запись по таймеру самозапуска

– Только модель DCR-TRV510E
Вы можете выполнить запись по таймеру самозапуска. Этот режим является полезным в том случае, если Вы хотите выполнить запись самого себя.

(1) Нажмите кнопку ⏲ (таймер самозапуска).
В видоискателе или на экране ЖКД появится индикатор ⏲ (таймер самозапуска).
(2) Нажмите кнопку START/STOP.
Таймер самозапуска начнет обратный отсчет от 10 с зуммерным сигналом. В последние две секунды обратного отсчета зуммерный сигнал будет звучать чаще, а затем автоматически начнется запись.



To stop the self-timer during recording
Press START/STOP.

To record still pictures using the self-timer
Press PHOTO in step 2.

To cancel self-timer recording
Press ⏲ so that the ⏲ indicator disappears from the LCD screen or viewfinder while the camcorder is in the standby mode.

The self-timer recording mode is automatically canceled when
- Self-timer recording is finished.
- The POWER switch is set to OFF or PLAYER.

Для остановки таймера самозапуска во время записи
Нажмите кнопку START/STOP.

Для записи неподвижных изображений с помощью таймера самозапуска
Нажмите кнопку PHOTO в пункте 2.

Для отмены записи по таймеру самозапуска
Нажмите кнопку ⏲, так чтобы индикатор ⏲ исчез с экрана ЖКД или видоискателя в то время, когда Ваша видеокамера находится в режиме ожидания.

Режим записи по таймеру самозапуска будет автоматически отменен в случаях
- Окончания записи по таймеру самозапуска.
- Установки переключателя POWER в положение OFF или PLAYER.

After recording

(1) Turn STANDBY down to LOCK.
(2) Close the LCD panel.
(3) Eject the cassette.
(4) Set the POWER switch to OFF.

To record pictures with the viewfinder – adjusting the viewfinder

If you record pictures with the LCD panel closed, check the picture with the viewfinder. Adjust the viewfinder lens to your eyesight so that the indicators in the viewfinder come into sharp focus.

Lift up the viewfinder and move the viewfinder lens adjustment lever.

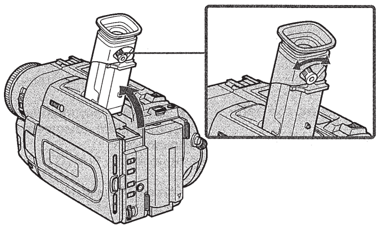
После записи

(1) Поверните рычаг STANDBY в положение LOCK.
(2) Закройте панель ЖКД.
(3) Извлеките кассету.
(4) Установите переключатель POWER в положение OFF.

Для записи изображений с помощью видоискателя – регулировка видоискателя

Если Вы будете записывать изображения при закрытой панели ЖКД, проверьте изображение с помощью видоискателя. Отрегулируйте объектив видоискателя в соответствии со своим зрением, так чтобы индикаторы в видоискателе были четко сфокусированы.

Поднимите видоискатель и подвигайте рычаг регулировки объектива видоискателя.

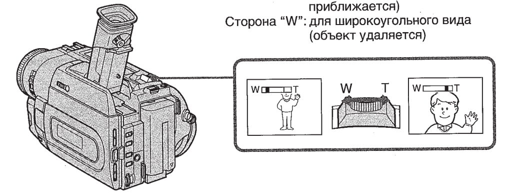


Using the zoom feature

Move the power zoom lever a little for a slower zoom. Move it further for a faster zoom.
Using the zoom function sparingly results in better-looking recordings.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)

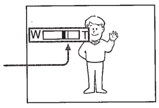
Использование функции наезда видеокамеры

Передвиньте рычаг приводного вариообъектива слегка для относительно медленного наезда видеокамеры.
Передвиньте его сильнее для ускоренного наезда видеокамеры.
Использование функции наезда видеокамеры в небольшом количестве обеспечивает наилучшие результаты.
Сторона "T": для телефото (объект приближается)
Сторона "W": для широкоугольного вида (объект удаляется)



Zoom greater than 20× is performed digitally.

Наезд видеокамеры более 20× выполняется цифровым методом.



The right side of the bar shows the digital zooming zone./
Правая сторона полосы на экране показывает зону цифровой трансфокации.

When you shoot close to a subject
If you cannot get a sharp focus, move the power zoom lever to the "W" side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 feet 5/8 inch) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

Notes on digital zoom
- Digital zoom starts to function when zoom exceeds 20×.
- The picture quality deteriorates as you go toward the "T" side. Set D ZOOM to OFF in the MENU settings. Otherwise the digital zoom activates without notice (p. 100).

При съемке объекта с близкого положения
Если Вы не можете получить четкой фокусировки, передвиньте рычаг приводного вариообъектива сторону "W" до получения четкой фокусировки. Вы можете выполнять съемку объекта в положении телефото, который отстоит по крайней мере на расстоянии 80 см от поверхности объектива или же около 1 см в положении широкоугольного вида.

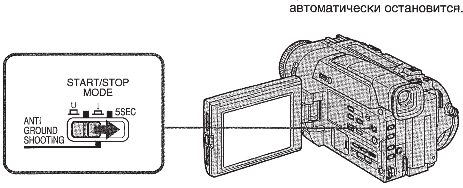
Примечания к наезду видеокамеры цифровым методом
- Цифровой вариообъектив начинает срабатывать в случае, если наезд видеокамеры превышает 20×.
- Качество изображения ухудшается по мере приближения к стороне "T". Установите функцию D ZOOM в установках MENU в положение OFF. В противном случае цифровой вариообъектив будет срабатывать без уведомления (стр. 100).

START/STOP MODE setting

⊔: Recording starts when you press START/STOP, and stops when you press it again (factory setting).
ANTI GROUND SHOOTING ⊥:
The camcorder records only while you press START/STOP. Use this mode to avoid recording unnecessary scenes.
5SEC: When you press use this mode to START/STOP, your camcorder records for 5 seconds and then stops automatically.

Установка START/STOP MODE

⊔: При нажатии кнопки START/STOP начнется запись, а при повторном нажатии этой кнопки запись остановится (заводская установка).
ANTI GROUND SHOOTING ⊥:
Видеокамера будет выполнять запись только при нажатии кнопки START/STOP. Используйте этот режим для избежания записи нежелательных эпизодов.
5SEC: Если Вы нажмете кнопку START/STOP, видеокамера будет выполнять запись в течение 5 секунд, а затем автоматически остановится.



Notes
- You cannot use the fader function in the 5SEC or ⊥ mode.
- The time code does not appear in the 5SEC mode.

To extend the recording time in the 5SEC mode
Five dots (●●●●●) appear, and then disappear at a rate of one per second. To extend the recording time, press START/STOP again before all the dots disappear. Recording continues for about 5 seconds from the moment you press START/STOP.

Примечания
- Вы не можете использовать функцию фейдера в режиме 5SEC или режиме ⊥.
- В режиме 5SEC счетчик ленты не появляется.

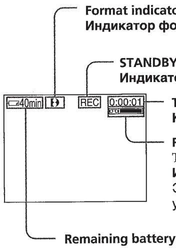
Для удлинения времени записи в режиме 5SEC
Пять точек (●●●●●) будут появляться, а затем исчезать по одной за секунду. Для удлинения времени записи нажмите кнопку START/STOP перед тем, как исчезнут все точки. Запись будет продолжаться около 5 секунд с момента нажатия кнопки START/STOP.

Indicators displayed in the recording mode

The indicators are not recorded on tape.

Индикаторы, отображаемые в режиме записи

Индикаторы не записываются на ленту.



Format indicator
Индикатор формата

STANDBY/REC indicator
Индикатор STANDBY/REC

Time code/Tape counter
Код времени/Счетчик ленты

Remaining tape indicator
This appears after you insert a cassette for a while.
Индикатор оставшейся ленты
Этот индикатор появляется на некоторое время после установки кассеты.

Remaining battery time indicator
Индикатор времени оставшегося заряда батарейного блока

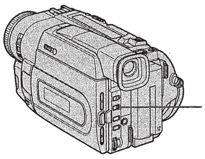
Time code (for tapes recorded in the Digital8 Ɖ system only)
The time code indicates the recording or playback time, "0:00:00" (hours:minutes: seconds) in CAMERA mode and "0:00:00:00" (hours:minutes:seconds:frames) in PLAYER mode. You cannot rewrite only the time code. When you playback tapes recorded in the Hi8/standard 8 system, the tape counter appears.

Код времени (только для лент, записанных в системе Digital8 Ɖ)
Код времени указывает время записи или воспроизведения, "0:00:00" (часы:минуты:секунды) в режиме CAMERA и "0:00:00:00" (часы, минуты, секунды: кадры) в режиме PLAYER. Вы не можете перезаписать только код времени. При воспроизведении лент, записанных в системе Hi8/стандартной системе 8 появится счетчик ленты.

Shooting backlit subjects (BACK LIGHT)

When you shoot a subject with the light source behind the subject or a subject with a light background, use the backlight function.

Press BACK LIGHT in the recording or standby mode.
The ▧ indicator appears in the viewfinder or on the LCD screen.
To cancel, press BACK LIGHT again.



If you press EXPOSURE when shooting backlit subjects
The backlight function will be canceled.

Съемка объектов с задней подсветкой (BACK LIGHT)

Если Вы выполняете съемку объекта с источником света позади него или же объекта со светлым фоном, используйте функцию задней подсветки.

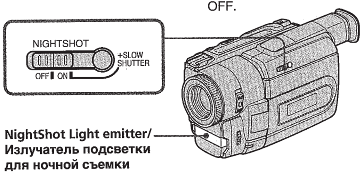
Нажмите кнопку BACK LIGHT в режиме записи или ожидания.
В видоискателе или на экране ЖКД появится индикатор ▧.
Для отмены нажмите кнопку BACK LIGHT еще раз.

Если Вы нажмете кнопку EXPOSURE при выполнении съемки объектов с задней подсветкой
Функция задней подсветки будет отменена.

Shooting in the dark (NightShot)

The NightShot function enables you to shoot a subject in a dark place. For example, you can satisfactorily record the environment of nocturnal animals for observation when you use this function.

(1) While your camcorder is in the standby mode, slide NIGHTSHOT to ON.
(2) Press START/STOP to start recording.
◙ and "NIGHTSHOT" indicators flash on the LCD screen or in the viewfinder. To cancel the NightShot function, slide NIGHTSHOT to OFF.



Using +SLOW SHUTTER

The NightShot +Slow shutter mode makes subjects more than four times brighter than those recorded in the NightShot mode.

(1) Slide NIGHTSHOT to ON in the standby mode. ◙ indicator appears.
(2) Press +SLOW SHUTTER until the desired NIGHTSHOT indicator flashes.
The indicator changes as follows:
◙ (NIGHTSHOT) → ◙1 (NIGHTSHOT1) → ◙2 (NIGHTSHOT2) → ◙ (NIGHTSHOT)
To cancel the NightShot +Slow shutter mode, slide NIGHTSHOT to OFF.

Using the NightShot Light

The picture will be clearer with the NightShot Light on. To enable NightShot Light, set N.S.LIGHT to ON in the MENU settings (p. 100).

Съемка в темноте (Ночная съемка)

Функция ночной съемки позволяет Вам выполнять съемку объектов в темных местах. Например, Вы сможете с успехом выполнять съемку ночных животных для наблюдения при использовании данной функции.

(1) В то время, когда видеокамера находится в режиме ожидания, передвиньте переключатель NIGHTSHOT в положение ON.
(2) Нажмите кнопку START/STOP для начала записи.
Индикаторы ◙ и "NIGHTSHOT" начнут мигать на экране ЖКД или в видоискателе. Для отмены функции ночной съемки передвиньте переключатель NIGHTSHOT в положении OFF.

Использование режима +SLOW SHUTTER

Режим ночной съемки +медленного затвора позволяет сделать объекты более чем в четыре раза ярче, чем в случае, если Вы будете выполнять съемку в темноте с помощью функции ночной съемки.

(1) Передвиньте переключатель NIGHTSHOT в положение ON в режиме ожидания. Появится индикатор ◙.
(2) Нажимайте кнопку +SLOW SHUTTER до тех пор, пока не начнет мигать нужный индикатор NIGHTSHOT.
Индикатор будет изменяться следующим образом:
◙ (NIGHTSHOT) → ◙1 (NIGHTSHOT1) → ◙2 (NIGHTSHOT2) → ◙ (NIGHTSHOT)
Для отмены режима ночной съемки +медленного затвора передвиньте переключатель NIGHTSHOT в положение OFF.

Использование подсветки для ночной съемки

Изображение станет ярче, если включить функцию ночной подсветки. Для включения функции ночной подсветки установите переключатель N.S.LIGHT в положение ON в установках MENU (стр. 100).

Notes
- Do not use the NightShot function in bright places (ex. outdoors in the daytime). This may cause your camcorder to malfunction.
- When you keep NIGHTSHOT set to ON in normal recording, the picture may be recorded in incorrect or unnatural colours.
- If focusing is difficult with the autofocus mode when using the NightShot function, focus manually.

While using the NightShot function, you can not use the following functions:
- Exposure
- PROGRAM AE
- Fader*
- Digital effect*

* You cannot use these functions only in the Nightshot +Slow shutter mode.

Shutter speed in the NightShot +Slow shutter mode

Indicator	Shutter speed
◙1 (NIGHTSHOT1)	1/12
◙2 (NIGHTSHOT2)	1/3

The +SLOW SHUTTER button does not work:
- while the fader function is set or in use
- while the digital effect function is in use
- when NIGHTSHOT is set to OFF

NightShot Light
NightShot Light rays are infrared and so are invisible. The maximum shooting distance using the NightShot Light is about 3 m (10 feet). The shooting distance will be twice or more in the NightShot +Slow shutter mode.

Примечания
- Не используйте функцию ночной съемки в ярких местах (например, на улице в дневное время). Это может привести к неисправности Вашей видеокамеры.
- При удержании установки NIGHTSHOT в положении ON при нормальной записи изображение может быть записано в неправильных или неестественных цветах.
- Если фокусировка затруднена в автоматическом режиме при использовании функции ночной съемки, выполните фокусировку вручную.

При использовании функции ночной съемки Вы не можете использовать следующие функции:
- Экспозиция
- PROGRAM AE
- Фейдер*
- Цифровой эффект*

* Вы не можете использовать эти функции только в режиме ночной съемки +медленного затвора.

Скорость затвора в режиме ночной съемки +медленного затвора

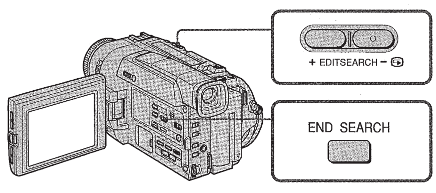
Индикатор	Скорость затвора
◙1 (NIGHTSHOT1)	1/12
◙2 (NIGHTSHOT2)	1/3

Кнопка +SLOW SHUTTER не работает:
- если установлена или используется функция фейдера
- если используется функция цифрового эффекта
- если переключатель NIGHTSHOT установлен в положение OFF

Подсветка для ночной съемки
Лучи подсветки для ночной съемки являются инфракрасными и поэтому невидимыми. Максимальное расстояние для съемки при использовании подсветки для ночной съемки равно примерно 3 м. В режиме ночной съемки +медленного затвора расстояние для съемки будет в два или более раз больше.

Checking the recording
– END SEARCH / EDITSEARCH / Rec Review

You can use these buttons to check the recorded picture or shoot so that the transition between the last recorded scene and the next scene you record is smooth.



END SEARCH

You can go to the end of the recorded section after you record.

Press END SEARCH in the standby mode.
The last 5 seconds of the recorded section are played back and playback stops. You can monitor the sound from the speaker or headphones.

EDITSEARCH

You can search for the next recording start point.

Hold down the +/– (⊜) side of EDITSEARCH in the standby mode. The recorded section is played back.
+ : to go forward
– : to go backward
Release EDITSEARCH to stop playback. If you press START/STOP, re-recording begins from the point you released EDITSEARCH. You cannot monitor the sound.

Проверка записи
– END SEARCH/EDITSEARCH/ Просмотр записи

Вы можете использовать эти кнопки для проверки записанного изображения или съемки, так чтобы переход между последним записанным эпизодом и следующим записываемым эпизодом был плавным.

END SEARCH

Вы можете дойти до конца записанной части ленты после выполнения записи.

Нажмите кнопку END SEARCH в режиме ожидания. Будут воспроизведены последние 5 секунд записанной части, и воспроизведение остановится. Вы можете контролировать звук через акустическую систему или головные телефоны.

EDITSEARCH

Вы можете выполнять поиск места начала следующей записи.

Держите нажатой сторону +/– (⊜) кнопки EDITSEARCH в режиме ожидания. Будет воспроизведена записанная часть.
+ : для продвижения вперед
– : для продвижения назад
Отпустите кнопку EDITSEARCH для остановки воспроизведения. Если Вы нажмете кнопку START/STOP, начнется перезапись с того места, где Вы отпустили кнопку EDITSEARCH. Вы не можете контролировать звук.

Checking the recording – END SEARCH / EDITSEARCH / Rec Review

Rec Review

You can check the last recorded section.

Press the – (⊜) side of EDITSEARCH momentarily in the standby mode.
The last few seconds of the recorded section are played back. You can monitor the sound from the speaker or headphones.

Notes
- END SEARCH, EDITSEARCH and Rec Review work only for tapes recorded in the Digital8 Ð system.
- If you start recording after using the end search function, occasionally, the transition between the last scene you recorded and the next scene may not be smooth.
- The end search function may not work when there is a blank portion between pictures on a tape.

Once you eject the cassette after you have recorded on the tape
The end search function does not work.

Проверка записи – END SEARCH / EDITSEARCH / Просмотр записи

Просмотр записи

Вы можете проверить последнюю записанную часть.

Нажмите кратковременно сторону – (⊜) кнопки EDITSEARCH в режиме ожидания.
Будут воспроизведены последние несколько секунд записанной части. Вы можете контролировать звук через акустическую систему или головные телефоны.

Примечания
- Функции END SEARCH, EDITSEARCH и просмотра записи работают только для лент, записанных в цифровой системе Digital8 Ð.
- Если Вы случайно начали запись после использования функции поиска конца записи, то переход между последним записанным эпизодом и следующим записываемым эпизодом может не быть плавным.
- Функция поиска конца может не работать, если имеется незаписанный участок между изображениями на ленте.

Если Вы вынули кассету после записи на ленту
Функция поиска конца записи работать не будет.

Playing back a tape

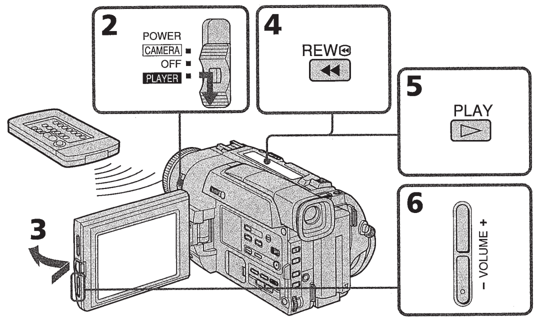
You can monitor the playback picture on the LCD screen or in the viewfinder. You can control playback using the Remote Commander supplied with your camcorder.

(1) Install the power source and insert the recorded tape.
(2) Set the POWER switch to PLAYER while pressing the small green button. The video control buttons light up.
(3) Open the LCD panel while pressing OPEN.
(4) Press ◀◀ to rewind the tape.
(5) Press ▶ to start playback.
(6) To adjust the volume, press either of the two buttons on VOLUME. The speaker on your camcorder is silent when the LCD panel is closed.

Воспроизведение ленты

Вы можете контролировать воспроизводимое изображение на экране ЖКД или в видоискателе. Вы можете контролировать воспроизведение с помощью пульта дистанционного управления, прилагаемого к Вашей видеокамере.

(1) Установите источник питания и вставьте записанную ленту.
(2) Нажав маленькую зеленую кнопку, установите переключатель POWER в положение PLAYER. Появится индикация кнопок управления.
(3) Нажав кнопку OPEN, откройте панель ЖКД.
(4) Нажмите кнопку ◀◀ для ускоренной перемотки ленты назад.
(5) Нажмите кнопку ▶ для включения воспроизведения.
(6) Для регулировки громкости нажимайте одну из двух кнопок VOLUME. Если панель ЖКД на Вашей видеокамере закрыта, динамик не будет работать.



To stop playback
Press ■.

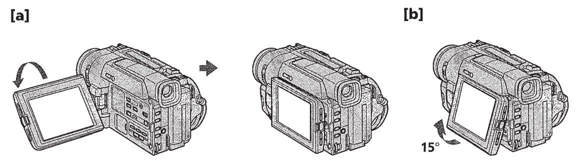
Для остановки воспроизведения
Нажмите кнопку ■.

Playing back a tape

When monitoring on the LCD screen
You can turn the LCD panel over and move it back to the camcorder body with the LCD screen facing out **[a]**. You can adjust the angle of the LCD panel by lifting the LCD panel up by 15 degrees **[b]**.

Воспроизведение ленты

Во время контроля на экране ЖКД
Вы можете повернуть панель управления и придвинуть ее обратно на место к корпусу видеокамеры, так что экран ЖКД будет обращен наружу **[a]**. Вы можете отрегулировать угол панели ЖКД, подняв панель ЖКД вверх на 15 градусов **[b]**.

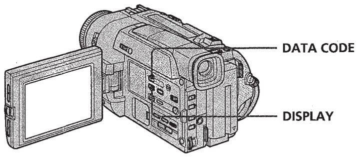


To display the screen indicators – Display function

Press DISPLAY on your camcorder or the Remote Commander supplied with your camcorder.
The indicators appear on the LCD screen.
To make the indicators disappear, press DISPLAY again.

Для отображения экранных индикаторов – Функция индикации

Нажмите кнопку DISPLAY на Вашей видеокамере или на пульте дистанционного управления, который прилагается к Вашей видеокамере.
На экране ЖКД появятся индикаторы.
Для того, чтобы индикаторы исчезли, нажмите еще раз кнопку DISPLAY.



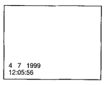
Playing back a tape

Using the data code function

Your camcorder automatically records not only images on the tape but also the recording data (date/time or various settings when recorded) **(Data code function)**.

Press DATA CODE on your camcorder or the Remote Commander in the playback mode.

The display changes as follows:
date/time → various settings (SteadyShot, exposure AUTO/MANUAL, white balance, gain, shutter speed, aperture value) → no indicator



Not to display recording data
Set DATA CODE to DATE in the MENU settings (p. 100).

The display changes as follows:
date/time → no indicator

Note on the data code function
The data code function works only for tapes recorded in the Digital8 Ð system.

Recording data
Recording data is your camcorder's information when you have recorded. In the recording mode, the recording data will not be displayed.

When you use data code function, bars (-- -- --) appear if:
- A blank section of the tape is being played back.
- The tape is unreadable due to tape damage or noise.
- The tape was recorded by a camcorder without the date and time set.

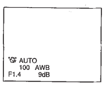
Воспроизведение ленты

Использование функции кода даты

Ваша видеокамера автоматически записывает не только изображения на ленту, но также и данные записи (дату/время или разные установки при записи). **(Функция кода даты)**.

Нажмите кнопку DATA CODE на Вашей видеокамере или пульте дистанционного управления в режиме воспроизведения.

Индикация будет изменяться следующим образом:
дата/время → разные установки (устойчивая съемка, экспозиция AUTO/MANUAL, баланс белого, усиление, скорость затвора, величина диафрагмы) → без индикации



Для того, чтобы не отображались данные записи
Установите команду DATA CODE в положение DATE в установках MENU (стр. 100).

Индикация будет изменяться следующим образом:
дата/время → без индикации

Примечание по функции кода данных
Функция кода данных работает только для лент, записанных в цифровой системе Digital8 Ð.

Записанные данные
Записанные данные несут информацию о записи, выполненной Вашей видеокамерой. В режиме записи данные отображаться не будут.

Если Вы используете функцию кода данных, то появятся полосы (-- -- --), если:
- Воспроизводится незаписанный участок на ленте.
- Лента является не читаемой из-за повреждения или помех.
- Запись на ленту была выполнена видеокамерой без установки даты и времени.

Various playback modes

To operate control buttons, set the POWER switch to PLAYER.

To view a still picture (playback pause)
Press II during playback. To resume playback, press II or ►.

To advance the tape
Press ▶▶ in the stop mode. To resume normal playback, press ►.

To rewind the tape
Press ◀◀ in the stop mode. To resume normal playback, press ►.

To change the playback direction
Press < on the Remote Commander during playback to reverse the playback direction. To resume normal playback, press ► .

To locate a scene monitoring the picture (picture search)
Keep pressing ◀◀ or ▶▶ during playback. To resume normal playback, release the button.

To monitor the high-speed picture while advancing or rewinding the tape (skip scan)
Keep pressing ◀◀ while rewinding or ▶▶ while advancing the tape. To resume rewinding or advancing, release the button.

To view the picture at slow speed (slow playback)
Press I► on the Remote Commander during playback. For slow playback in the reverse direction, press <, then press I► on the Remote Commander. To resume normal playback, press ►.

Переменные режимы воспроизведения

Для выполнения управления кнопками установите переключатель POWER в положение PLAYER.

Для просмотра неподвижного изображения (пауза воспроизведения)
Нажмите во время воспроизведения кнопку II. Для возобновления обычного воспроизведения нажмите кнопку II или кнопку ►.

Для ускоренной перемотки ленты вперед
Нажмите в режиме остановки кнопку ▶▶. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для ускоренной перемотки ленты назад
Нажмите в режиме остановки кнопку ◀◀. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для изменения направления воспроизведения
Нажмите кнопку < на пульте дистанционного управления во время воспроизведения для изменения направления воспроизведения. Для возобновления обычного воспроизведения, отпустите кнопку ►.

Для отыскания эпизода во время контроля изображения (поиск изображения)
Держите нажатой кнопку ◀◀ или ▶▶ во время воспроизведения. Для восстановления обычного воспроизведения отпустите кнопку.

Для контроля изображения на высокой скорости во время ускоренной перемотки ленты вперед или назад (поиск методом прогона)
Держите нажатой кнопку ◀◀ во время ускоренной перемотки ленты назад или кнопку ▶▶ во время ускоренной перемотки ленты вперед. Для возобновления обычной перемотки ленты вперед или назад отпустите кнопку.

Для просмотра воспроизведения изображения на замедленной скорости (замедленное воспроизведение)
Нажмите во время воспроизведения кнопку I► на пульте дистанционного управления. Для замедленного воспроизведения в обратном направлении нажмите кнопку <, а затем нажмите кнопку I► на пульте дистанционного управления. Для возобновления обычного воспроизведения нажмите кнопку ►.

To view the picture at double speed
Press ×2 on the Remote Commander during playback. For double speed playback in the reverse direction, press <, then press ×2 on the Remote Commander. To resume normal playback, press ►.

To view the picture frame-by-frame
Press II► on the Remote Commander in the playback pause mode. For frame-by-frame playback in the reverse direction, press ◀II. To resume normal playback, press ►.

To search the last scene recorded (END SEARCH)
Press END SEARCH in the stop mode. The last 5 seconds of the recorded section plays back and stops.

In the various playback modes
- Noise may appear when your camcorder plays back tapes recorded in the Hi8/standard 8 system.
- Sound is muted.
- The previous recording may appear as a mosaic image when playing back in the Digital8 Ð system.

When the playback pause mode lasts for 3 minutes
- Your camcorder automatically enters the stop mode. To resume playback, press ►.
- The previous recording may appear.

Slow playback for tapes recorded in the Digital8 Ð system
The slow playback can be performed smoothly on your camcorder; however, this function does not work for an output signal from the i DV OUT jack.

Для просмотра воспроизведения изображения на удвоенной скорости
Нажмите кнопку ×2 на пульте дистанционного управления во время воспроизведения. Для воспроизведения на удвоенной скорости в обратном направлении нажмите кнопку <, а затем кнопку ×2 на пульте дистанционного управления. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для покадрового просмотра воспроизведения изображения
Нажмите кнопку II► на пульте дистанционного управления в режиме паузы воспроизведения. Для покадрового воспроизведения в обратном направлении нажмите кнопку ◀II. Для возобновления обычного воспроизведения нажмите кнопку ►.

Для поиска последнего записанного эпизода (END SEARCH)
Нажмите кнопку END SEARCH в режиме остановки. Будут воспроизведены последние 5 секунд записанного эпизода, после чего воспроизведение остановится.

В переменных режимах воспроизведения
- При воспроизведении на видеокамере лент, записанных в системе Hi8/стандартной системе 8, могут появиться помехи.
- Звук будет приглушен.
- При воспроизведении в цифровой системе Digital8 Ð изображение предыдущих записей может стать мозаичным.

Если режим паузы воспроизведения продлится 3 минуты
- Ваша видеокамера автоматически войдет в режим остановки. Для возобновления воспроизведения нажмите кнопку ►.
- Может появиться предыдущая запись.

Замедленное воспроизведение для лент, записанных в системе Digital8 Ð
Замедленное воспроизведение, может выполняться на Вашей видеокамере без помех; однако эта функция не работает через выходной сигнал из гнезда i DV OUT.

Viewing the recording on TV

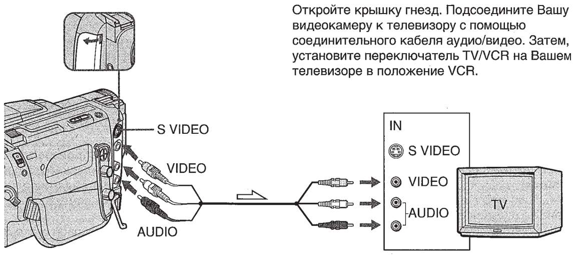
Connect your camcorder to your TV or VCR with the A/V connecting cable supplied with your camcorder to watch the playback picture on the TV screen. You can operate the playback control buttons in the same way as when you monitor playback pictures on the LCD screen. When monitoring the playback picture on the TV screen, we recommend that you power your camcorder from the mains using the AC power adaptor (p. 18). Refer to the operating instructions of your TV or VCR.

Open the jack cover. Connect your camcorder to the TV using the A/V connecting cable. Then, set the TV/VCR selector on the TV to VCR.

Просмотр записи на экране телевизора

Подсоедините Вашу видеокамеру к Вашему телевизору или КВМ с помощью соединительного кабеля аудио/видео, который прилагается к Вашей видеокамере для просмотра воспроизводимого изображения на экране телевизора. Вы можете оперировать кнопками управления воспроизведением таким же способом, как при управлении воспроизводимым изображением на экране ЖКД. При управлении воспроизводимым изображением на экране телевизора рекомендуется подключить питание к Вашей видеокамере от сетевой розетки с помощью сетевого адаптера переменного тока (стр. 18). См. инструкцию по эксплуатации Вашего телевизора или КВМ.

Откройте крышку гнезд. Подсоедините Вашу видеокамеру к телевизору с помощью соединительного кабеля аудио/видео. Затем, установите переключатель TV/VCR на Вашем телевизоре в положение VCR.



⇨ : Signal flow/Передача сигнала

If your TV is already connected to a VCR

Connect your camcorder to the LINE IN input on the VCR by using the A/V connecting cable supplied with your camcorder. Set the input selector on the VCR to LINE.

Если Ваш телевизор уже подсоединен к КВМ

Подсоедините Вашу видеокамеру к входному гнезду LINE IN на КВМ с помощью соединительного кабеля аудио/видео, который прилагается к Вашей видеокамере. Установите селектор входного сигнала на КВМ в положение LINE.

If your TV or VCR is a monaural type

Connect the yellow plug for video and the white plug for audio on both your camcorder and the TV or the VCR (you do not connect the red plug). With this connection, the sound is monaural even on stereo models.

If your TV/VCR has a 21-pin connector (EUROCONNECTOR)

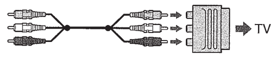
Use the 21-pin adaptor supplied with your camcorder.

Если Ваш телевизор или КВМ монофонического типа

Подсоедините желтый штекер для видеосигнала и белый штекер для аудиосигнала к Вашей видеокамере и телевизору или КВМ (Вам не нужно подсоединять красный штекер).
При данном соединении звук будет монофоническим даже на стереофонических моделях.

Если в Вашем телевизоре/КВМ имеется 21-штырьковый разъем (EUROCONNECTOR)

Используйте 21-штырьковый адаптер, прилагаемый к Вашей видеокамере.



To connect to a TV or VCR without Video/Audio input jacks

Use a PAL system RFU adaptor (not supplied). Refer to the operating instructions of your TV or VCR and the RFU adaptor. With an RFU adaptor, the sound is monaural.

If your TV or VCR has an S video jack
Connect using an S video cable (not supplied) to obtain high-quality pictures. With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable. Connect the S video cable (not supplied) to the S video jacks on both your camcorder and the TV or the VCR.

Monitoring the picture from a TV or VCR
You can monitor the picture on the LCD screen. Connect your camcorder to the outputs on the TV or VCR.

Для подсоединения к Вашему телевизору или КВМ без входных гнезд аудио/видео

Используйте ВЧ-адаптер системы PAL (не прилагается).
Обратитесь к инструкции по эксплуатации Вашего телевизора или КВМ и ВЧ-адаптера.
При использовании ВЧ-адаптера звук будет монофоническим.

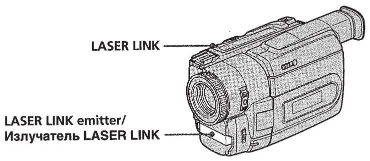
Если в Вашем телевизоре или КВМ имеется гнездо S видео.
Выполните соединение с помощью кабеля S видео (не прилагается) для получения высококачественного изображения. При данном соединении Вам не нужно подсоединять желтый штекер (видео) соединительного кабеля аудио/видео. Подсоедините кабель S видео (не прилагается) к гнездам S видео на Вашей видеокамере и Вашем телевизоре или КВМ.

Контроль изображения через телевизор или КВМ
Вы можете контролировать изображение на экране ЖКД. Подсоедините Вашу видеокамеру к выходным гнездам на телевизоре или КВМ.

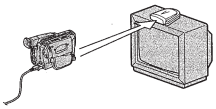
Viewing the recording on TV

Using the AV cordless IR receiver

Once you connect the AV cordless IR receiver (not supplied) to your TV or VCR, you can easily view the picture on your TV. For details, refer to the operating instructions of the AV cordless IR receiver.



(1) After connecting your TV and AV cordless IR receiver, set the POWER switch on the AV cordless IR receiver to ON.
(2) Turn the TV on and set the TV/VCR selector on the TV to VCR.
(3) Press LASER LINK. The lamp of LASER LINK lights up.
(4) Press ► on your camcorder to start playback.
(5) Point the LASER LINK emitter at the AV cordless IR receiver. Adjust the position of your camcorder and the AV cordless IR receiver to obtain clear playback pictures.



To cancel the laser link function

Press LASER LINK. The lamp on the LASER LINK button goes out.

Просмотр записи на экране телевизора

Использование беспроводного ИК аудиовидеоприемника

После подсоединения беспроводного ИК аудиовидеоприемника к Вашему телевизору (не прилагается) Вы можете легко наблюдать изображение на экране Вашего телевизора. Подробные сведения содержатся в инструкции по эксплуатации беспроводного ИК аудиовидеоприемника.

(1) После подсоединения к Вашему телевизору беспроводного ИК аудиовидеоприемника установите переключатель POWER на беспроводном ИК аудиовидеоприемнике в положение ON.
(2) Включите телевизор и установите селектор TV/VCR на телевизоре в положение VCR.
(3) Нажмите кнопку LASER LINK. Высветится лампочка LASER LINK.
(4) Нажмите кнопку ► на Вашей видеокамере для начала включения воспроизведения.
(5) Направьте излучатель LASER LINK на беспроводный ИК аудиовидеоприемник. Отрегулируйте положение Вашей видеокамеры и беспроводного ИК аудиовидеоприемника для получения четкого воспроизводимого изображения.

Для отмены функции лазерного канала передачи сигналов

Нажмите кнопку LASER LINK. Лампочка на кнопке LASER LINK погаснет.

Viewing the recording on TV

If you turn the power off
Laser link turns off automatically.

Note
When laser link is activated (the LASER LINK button is lit), your camcorder consumes power. Press LASER LINK to turn off the laser link function when it is not needed.

Просмотр записи на экране телевизора

Если Вы выключите питание
Лазерный канал передачи сигналов выключится автоматически.

Примечание
При включенном лазерном канале передачи сигналов (при этом высвечивается кнопка LASER LINK) Ваша видеокамера потребляет питание. Нажмите кнопку LASER LINK для выключения функции лазерного канала передачи сигналов, если она не требуется.

— Advanced Recording Operations —

Photo recording

You can record a still picture like a photograph. This mode is useful when you want to record a picture such as a photograph or when you print a picture using a video printer (not supplied).

(1) Set the POWER switch to CAMERA.
(2) In the standby mode, keep pressing PHOTO lightly until a still picture appears. The CAPTURE indicator appears. Recording does not start yet.
To change the still picture, release PHOTO, select a still picture again, and then press and hold PHOTO lightly.
(3) Press PHOTO deeper.
The still picture in the viewfinder or on the LCD screen is recorded for about seven seconds. The sound during those seven seconds is also recorded.
During recording, the image you are shooting appears in the viewfinder or on the LCD screen.

— Усовершенствованные операции съемки —

Фотосъемка

Вы можете записывать неподвижное изображение подобно фотографии. Данный режим полезен, если Вы хотите записывать изображение в виде фотоснимка или же при выполнении отпечатков с помощью видеопринтера (не прилагается).

(1) Установите переключатель POWER в положение CAMERA.
(2) В режиме ожидания держите слегка нажатой кнопку PHOTO до тех пор, пока не появится неподвижное изображение. Появится индикатор CAPTURE. Запись пока еще не началась.
Для изменения неподвижного изображения отпустите кнопку PHOTO, выберите неподвижное изображение снова, а затем нажмите и держите слегка нажатой кнопку PHOTO.
(3) Нажмите кнопку PHOTO сильнее.
Неподвижное изображение в видоискателе или на экране ЖКД будет записываться около семи секунд. В течение этих семи секунд будет записываться и звук.
Во время записи, изображение, которое Вы снимаете, появится в видоискателе или на экране ЖКД.

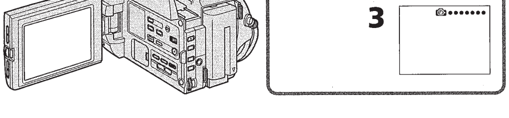


Photo recording

Notes
- During photo recording, you cannot change the mode or setting.
- During photo recording, you cannot turn your camcorder off or press the PHOTO button.
- The PHOTO button does not work:
  - while the digital effect function is set or in use.
  - while the fader function is in use.
- When recording a still picture, do not shake your camcorder. The picture may fluctuate.

To use the photo recording function using the Remote Commander

Press PHOTO in the Remote Commander. Your camcorder record a picture on the LCD screen or in the viewfinder immediately.

To use the photo recording function during normal CAMERA recording

Press PHOTO deeper. The still picture is then recorded for about seven seconds and your camcorder returns to the standby mode. You cannot select another still picture.

Фотосъемка

Примечания
- Во время фотосъемки Вы не можете изменять режим или установку.
- Во время фотосъемки Вы не можете выключать Вашу видеокамеру или нажимать кнопку PHOTO.
- Кнопка PHOTO не работает:
  - если установлена или используется функция цифрового эффекта.
  - если используется функция фейдера.
- При записи неподвижного изображения не трясите Вашу видеокамеру. Изображение может быть неустойчивым.

Для использования функции фотосъемки с помощью пульта дистанционного управления

Нажмите кнопку PHOTO на пульте дистанционного управления. Ваша видеокамера тотчас же начнет запись изображения на экране ЖКД или в видоискателе.

Для использования функции фотосъемки во время обычной записи CAMERA

Нажмите кнопку PHOTO посильнее. Неподвижное изображение будет записываться около семи секунд, а затем видеокамера вернется в режим ожидания. Вы не сможете при этом выбрать другое неподвижное изображение.

Photo recording

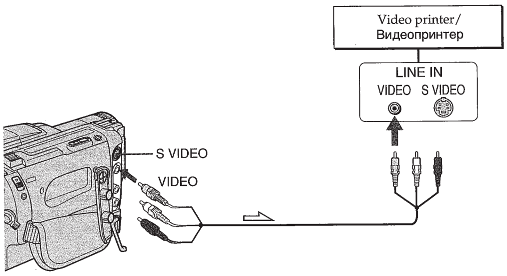
Printing the still picture

You can print a still picture by using the video printer (not supplied). Connect the video printer using the A/V connecting cable supplied with your camcorder.
Connect the yellow plug of the cable to the VIDEO jack and to the video input of the video printer. Refer to the operating instructions of the video printer as well.

Фотосъемка

Печатание неподвижного изображения

Вы можете выполнить печатание неподвижного изображения с помощью видеопринтера (не прилагается).
Подсоедините видеопринтер с помощью соединительного кабеля аудио/видео, который прилагается к Вашей видеокамере.
Подсоедините желтый штекер кабеля к гнезду VIDEO и к входному гнезду видеосигнала на видеопринтере.
Воспользуйтесь также инструкцией по эксплуатации видеопринтера.



⇨ : Signal flow/Передача сигнала

If the video printer is equipped with S video input
Use the S video connecting cable (not supplied). Connect it to the S VIDEO jack and the S video input of the video printer.

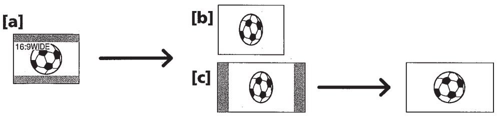
Если в видеопринтере имеется входное гнездо S видео
Используйте соединительный кабель S видео (не прилагается). Подсоедините его к гнезду S VIDEO и ко входному гнезду S видео на видеопринтере.

Using the wide mode

You can record a 16:9 wide picture to watch on the 16:9 wide-screen TV (16:9WIDE).
The picture with black bands at the top and the bottom on the LCD screen or in the viewfinder **[a]** is normal. The picture on a normal TV **[b]** is horizontally compressed. You can watch the picture of normal images on a wide-screen TV **[c]**.

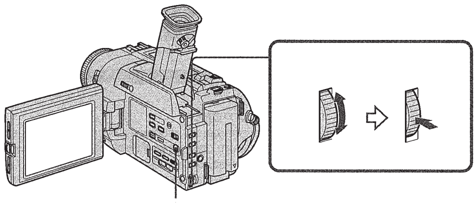
Использование широкоэкранного режима

Вы можете записывать широкоформатное изображение16:9 для просмотра на широкоэкранном телевизоре формата16:9 (16:9WIDE).
На изображении будут черные полосы в верхней и нижней части экрана ЖКД или видоискателя **[a]**, что является нормальным. Изображение на обычном телевизоре **[b]** будет сжато по горизонтали. Нормальное изображение Вы можете наблюдать на широкоэкранном телевизоре **[c]**.



In the standby mode, set 16:9WIDE to ON in the MENU settings (p. 100).

В режиме ожидания установите команду 16:9WIDE в положение ON в установках MENU (стр. 100).



To cancel the wide mode
Set 16:9WIDE to OFF in the MENU settings.

In the wide mode
You cannot select the old movie function with DIGITAL EFFECT and the bounce function with FADER.

During recording
You cannot select or cancel the wide mode.

Для отмены широкоэкранного режима
Установите команду 16:9WIDE в положение OFF в установках MENU.

В широкоэкранном режиме
Вы не можете выбрать функцию старинного кино с помощью функции DIGITAL EFFECT и функцию перескакивания с помощью функции FADER.

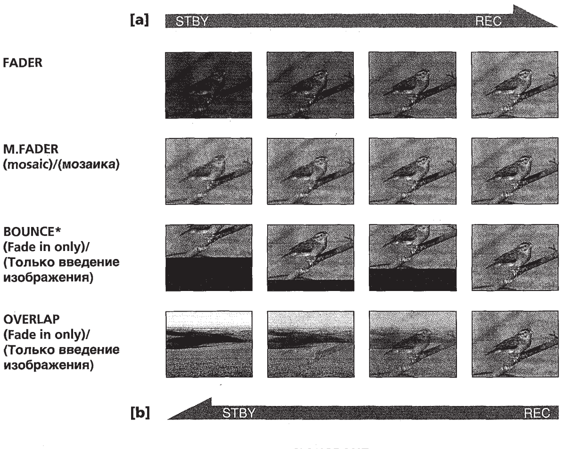
Во время записи
Вы не можете выбрать или отменить широкоэкранный режим.

Using the fader function

You can fade in or out to give your recording a professional appearance.

Использование функции фейдера

Вы можете выполнять плавное введение и выведение изображения, чтобы придать Вашей съемке профессиональный вид.



MONOTONE
When fading in, the picture gradually changes from black-and-white to colour.
When fading out the picture gradually changes from colour to black-and-white.

* You cannot use this function when D ZOOM is set to ON in the MENU settings.

MONOTONE
При введении изображение будет постепенно изменяться от черно-белого до цветного.
При выведении изображение будет постепенно изменяться от цветного до черно-белого.

* Вы не можете использовать эту функцию, если команда D ZOOM установлена в положение ON в установках MENU.

Using the fader function

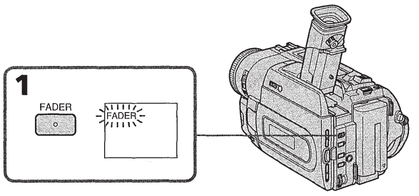
(1) When fading in [a]
In the standby mode, press FADER until the desired fader indicator flashes.
When fading out [b]
In the recording mode, press FADER until the desired fader indicator flashes.
The indicator changes as follows:
FADER → M.FADER → BOUNCE → MONOTONE → OVERLAP → no indicator
The last selected fader mode is indicated first of all.

(2) Press START/STOP. The fader indicator stops flashing.

Использование функции фейдера

(1) При введении изображения [a]
В режиме ожидания, нажимайте кнопку FADER до тех пор, пока не начнет мигать нужный индикатор фейдера.
При выведении изображения [b]
В режиме записи, нажимайте кнопку FADER до тех пор, пока не начнет мигать нужный индикатор фейдера.
Индикатор будет изменяться следующим образом:
FADER → M.FADER → BOUNCE → MONOTONE → OVERLAP → без индикатора
Последний из выбранных режимов фейдера отображается первым.

(2) Нажмите кнопку START/STOP. Индикатор фейдера перестанет мигать.



To cancel the fader function
After the fade in/out is carried out : Your camcorder automatically returns to the normal mode.
Before the fade in/out is carried out : Before pressing START/STOP, press FADER until the indicator disappears.

Для отмены функции фейдера
После того, как выполнено введение/выведение изображения: Ваша видеокамера автоматически вернется в обычный режим.
Перед тем, как выполнить введение/выведение изображения: Перед тем, как нажать кнопку START/STOP, нажимайте кнопку FADER до тех пор, пока не исчезнет индикатор.

Using the Fader function

Notes

- The overlap function works only for tapes recorded in the Digital8 Ð system.
- You cannot use the following functions while using the fader function. Also, you cannot use the fader function while using the following functions.
  - –Digital effect
  - –Low lux mode of PROGRAM AE (Overlap function only)
  - –NightShot +Slow shutter
  - –Photo recording

When the OVERLAP indicator appears
Your camcorder automatically memorizes the image recorded on a tape. As the image is being memorized, the OVERLAP indicator flashes fast, and the playback picture is displayed. At this stage, the picture may not be recorded clearly, depending on the tape condition.

When START/STOP MODE is set to ⊥ or 5SEC
You cannot use the fader function.

While using the bounce function, you cannot use the following functions:
– Exposure
– Focus
– Zoom
– Picture effect

Note on the bounce function
The BOUNCE indicator does not appear in the following mode or functions:
– D ZOOM is set to ON in the MENU settings
– Wide mode
– Picture effect
– PROGRAM AE

Использование функции фейдера

Примечания

- Функция наложения изображения работает только для лент, записанных в цифровой системе Digital8 Ð.
- Вы не можете использовать следующие функции во время использования функции фейдера. Также, Вы не можете использовать функцию фейдера во время использования следующих функций.
  - –Цифровой эффект
  - –Режим низкой освещенности PROGRAM AE (только функция наложения/вытеснения изображения шторкой)
  - –Ночная съемка +медленный затвор
  - –Фотосъемка

Когда появляется индикатор OVERLAP
Видеокамера автоматически запоминает изображение, записанное на ленте. Когда изображение будет запомнено, индикатор OVERLAP начинает быстро мигать, и воспроизводимое изображение будет отображено. В таком состоянии изображение может не записываться четко в зависимости от состояния ленты.

Если команда START/STOP MODE установлена в положение ⊥ или 5SEC
Вы не можете использовать функцию фейдера.

Во время использования функции перескакивания Вы не можете использовать следующие функции:
– Экспозиция
– Фокусировка
– Трансфокация
– Эффект изображения

Примечание по функции перескакивания
Индикатор BOUNCE не появляется в следующих режимах или при использовании следующих функций:
– Команда D ZOOM установлена в положение ON в установках MENU
– Широкоэкранный режим
– Эффект изображения
– PROGRAM AE

Using special effects – Picture effect

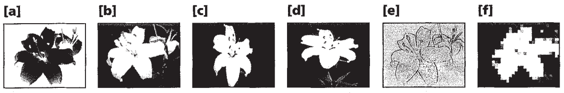
You can digitally process images to obtain special effects like those in films or on the TV.

NEG. ART [a] :	The colour and brightness of the picture is reversed.
SEPIA :	The picture is sepia.
B&W :	The picture is monochrome (black-and-white).
SOLARIZE [b] :	The light intensity is clearer, and the picture looks like an illustration.
SLIM [c] :	The picture expands vertically.
STRETCH [d] :	The picture expands horizontally.
PASTEL [e] :	The contrast of the picture is emphasized, and the picture looks like an animated cartoon.
MOSAIC [f] :	The picture is mosaic.

Использование специальных эффектов – Эффект изображения

Вы можете выполнять обработку изображения цифровым методом для получения специальных эффектов, как в кинофильмах или на экранах телевизоров.

NEG. ART [a] :	Цвет и яркость изображения будут негативными.
SEPIA :	Изображение будет в цвете сепии.
B&W :	Изображение будет монохроматическим (черно-белым).
SOLARIZE [b] :	Яркость света будет усиленной, а изображение будет выглядеть как иллюстрация.
SLIM [c] :	Изображение растянется по вертикали.
STRETCH [d] :	Изображение растянется по горизонтали.
PASTEL [e] :	Подчеркивается контрастность изображения, которому придается мультипликационный вид.
MOSAIC [f] :	Изображение будет мозаическим.

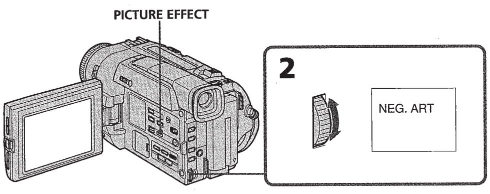


Using special effects – Picture effect

(1) Press PICTURE EFFECT in the standby or recording mode.
The picture effect indicator appears.
(2) Turn the SEL/PUSH EXEC dial to select the desired picture effect mode.
The indicator changes as follows:
NEG.ART ←→ SEPIA ←→ B&W ←→
SOLARIZE ←→ SLIM ←→ STRETCH ←→
PASTEL ←→ MOSAIC

Использование специальных эффектов – Эффект изображения

(1) Нажмите кнопку PICTURE EFFECT в режиме ожидания или режиме записи.
Появится индикатор эффекта изображения.
(2) Поверните диск SEL/PUSH EXEC для выбора режима нужного эффекта изображения.
Индикатор будет изменяться следующим образом:
NEG.ART ←→ SEPIA ←→ B&W ←→
SOLARIZE ←→ SLIM ←→ STRETCH ←→
PASTEL ←→ MOSAIC



To turn the picture effect function off

Press PICTURE EFFECT.

While using the picture effect function
You cannot select the old movie mode with DIGITAL EFFECT.

When you turn the power off
Your camcorder automatically returns to the normal mode.

Для выключения функции эффекта изображения

Нажмите кнопку PICTURE EFFECT.

При использовании функции эффекта изображения
Вы не можете выбрать режим старинного кино с помощью функции DIGITAL EFFECT.

Если Вы выключите питание
Ваша видеокамера автоматически вернется в обычный режим.

Using special effects – Digital effect

You can add special effects to recorded pictures using the various digital functions. The sound is recorded normally.

STILL
You can record a still picture so that it is superimposed on a moving picture.

FLASH (FLASH MOTION)
You can record still pictures successively at constant intervals.

LUMI. (LUMINANCEKEY)
You can swap a brighter area in a still picture with a moving picture.

TRAIL
You can record the picture so that an incidental image like a trail is left.

SLOW SHTR (SLOW SHUTTER)
You can slow down the shutter speed. The slow shutter mode is good for recording dark pictures more brightly. However, the picture may be less clear.

OLD MOVIE
You can add an old movie type atmosphere to pictures. Your camcorder automatically sets the wide mode to ON, picture effect to SEPIA, and the appropriate shutter speed.

Использование специальных эффектов – Цифровой эффект

Вы можете добавлять специальные эффекты к записываемому изображению с помощью разных цифровых функций. Записываемый звук будет обычным.

STILL
Вы можете записывать неподвижное изображение, которое можно налагать на подвижное изображение.

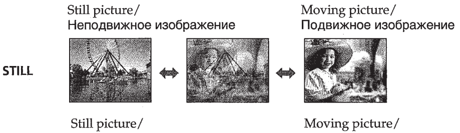
FLASH (FLASH MOTION)
Вы можете записывать неподвижные изображения в последовательности через определенные интервалы.

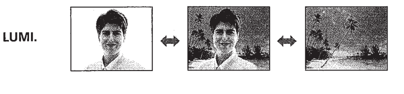
LUMI. (LUMINANCEKEY)
Вы можете изменять яркие места на неподвижном изображении на подвижные изображения.

TRAIL
Вы можете записывать изображение с эффектом запаздывания.

SLOW SHTR (SLOW SHUTTER)
Вы можете замедлить скорость затвора. Режим медленного затвора является подходящим для записи темных изображений в более ярком свете. Однако, изображение может получиться менее четким.

OLD MOVIE
Вы можете привносить атмосферу старинного кино в изображения. Ваша видеокамера будет автоматически устанавливать широкоэкранный режим в положение ON, эффект изображения в положение SEPIA, и выставлять соответствующую скорость затвора.





Using special effects – Digital effect

(1) While your camcorder is in the standby or recording mode, press DIGITAL EFFECT. The digital effect indicator appears.
(2) Turn the SEL/PUSH EXEC dial to select the desired digital effect mode.
The indicator changes as follows:
STILL ←→ FLASH ←→ LUMI. ←→ TRAIL ←→ SLOW SHTR ←→ OLD MOVIE
(3) Press the SEL/PUSH EXEC dial. The indicator lights up and the bars appear. In the STILL and LUMI. modes, the still picture is stored in memory.
(4) Turn the SEL/PUSH EXEC dial to adjust the effect.

Items to adjust

STILL	The rate of the still picture you want to superimpose on the moving picture
FLASH	The interval of flash motion
LUMI.	The colour scheme of the area in the still picture which is to be swapped with a moving picture
TRAIL	The vanishing time of the incidental image
SLOW SHTR	Shutter speed. The larger the shutter speed number, the slower the shutter speed.
OLD MOVIE	No adjustment necessary

The more bars there are on screen, the stronger the digital effect. The bars appear in the following modes: STILL, FLASH, LUMI. and TRAIL.

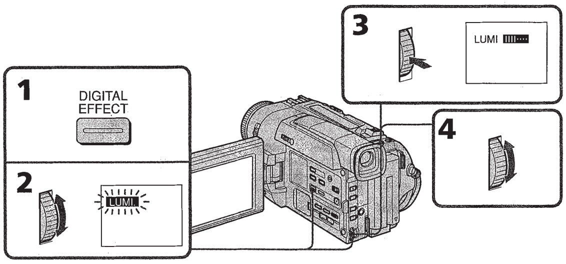
Использование специальных эффектов – Цифровой эффект

(1) В то время, когда Ваша видеокамера находится в режиме ожидания или режиме записи, нажмите кнопку DIGITAL EFFECT. Появится индикатор цифрового эффекта.
(2) Поверните диск SEL/PUSH EXEC для выбора режима нужного цифрового эффекта.
Индикатор будет изменяться следующим образом:
STILL ←→ FLASH ←→ LUMI. ←→ TRAIL ←→ SLOW SHTR ←→ OLD MOVIE
(3) Нажмите диск SEL/PUSH EXEC. Высветится индикатор и появятся полосы. В режимах STILL и LUMI. неподвижное изображение будет сохранено в памяти.
(4) Поверните диск SEL/PUSH EXEC для регулировки эффекта.

Пункты для регулировки

STILL	Интенсивность неподвижного изображения, которое Вы хотите наложить на подвижное изображение
FLASH	Интервал прерывистого движения
LUMI.	Цветовая гамма участка на неподвижном изображении, который будет заменен на подвижное изображение
TRAIL	Время исчезания побочного изображения
SLOW SHTR	Скорость затвора. Чем больше величина скорости затвора, тем медленнее скорость затвора
OLD MOVIE	Не требуется никаких регулировок

Чем больше полос на экране, тем сильнее цифровой эффект. Полосы появляются в следующих режимах: STILL, FLASH, LUMI. и TRAIL.



Using special effects – Digital effect

To cancel the digital effect
Press DIGITAL EFFECT. The digital effect indicator disappears.

Notes
- The following functions do not work during digital effect:
  - Fader
  - Low lux mode of PROGRAM AE
  - Photo recording
  - NightShot +Slow shutter
- The following functions do not work in the slow shutter mode:
  - Exposure
  - PROGRAM AE
- The following functions do not work in the old movie mode:
  - Exposure
  - Wide mode
  - Picture effect
  - PROGRAM AE

When you turn the power off
The digital effect will be automatically canceled.

When recording in the slow shutter mode
Auto focus may not be effective. Focus manually using a tripod.

Shutter speed

Shutter speed number	Shutter speed
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3

Использование специальных эффектов – Цифровой эффект

Для отмены цифрового эффекта
Нажмите кнопку DIGITAL EFFECT. Индикатор цифрового эффекта исчезнет.

Примечания
- Следующие функции не работают при использовании цифрового эффекта:
  - Фейдер
  - Режим низкой освещенности PROGRAM AE
  - Фотосъемка
  - Ночная съемка +медленный затвор
- Следующие функции не работают в режиме медленного затвора:
  - Экспозиция
  - PROGRAM AE
- Следующие функции не работают в режиме старинного кино:
  - Экспозиция
  - Широкоэкранный режим
  - Эффект изображения
  - PROGRAM AE

При выключении питания
Цифровой эффект будет автоматически отменен.

При записи в режиме медленного затвора
Автоматическая фокусировка может быть не эффективной. Выполните фокусировку вручную, используя треногу.

Скорость затвора

Величина скорости затвора	Скорость затвора
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3

Using the PROGRAM AE function

You can select PROGRAM AE (Auto Exposure) mode to suit your specific shooting requirements.

Spotlight mode
This mode prevents people's faces, for example, from appearing excessively white when shooting subjects lit by strong light at weddings or in the theatre.

Soft portrait mode
This mode brings out the subject while creating a soft background for subjects such as people or flowers, and faithfully reproduces skin colour.

Sports lesson mode
This mode minimizes shake on fast-moving subjects such as in tennis or golf.

Beach & ski mode
This mode prevents people's faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.

Sunset & moon mode
This mode allows you to maintain atmosphere when you are recording sunsets, general night views, fireworks displays and neon signs.

Landscape mode
This mode is for when you are recording distant subjects such as mountains and prevents your camcorder from focusing on glass or metal mesh in windows when you are recording a subject behind glass or a screen.

Low lux mode
This mode makes subjects brighter in insufficient light.

Использование функции PROGRAM AE

Вы можете выбрать режим PROGRAM AE (автоматическая съемка) в соответствии со специфическими требованиями к съемке.

Режим прожекторного освещения
Данный режим предотвращает, к примеру, лица людей от появления в чрезмерно белом свете при выполнении съемки людей, освещенных сильным светом на свадебных церемониях или в театре.

Мягкий портретный режим
Этот режим позволяет выделить объект на фоне мягкого фона, и подходит для съемки, например, людей или цветов, обеспечивая точное воспроизведением телесного цвета.

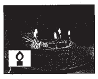
Режим спортивных состязаний
Этот режим позволяет минимизировать дрожание при съемке быстро движущихся предметов, например, при игре в теннис или гольф.

Пляжный и лыжный режим
Этот режим предотвращает появление темных лиц людей в зоне сильного света или отраженного света, например, на пляже в разгар лета или на снежном склоне.

Режим захода солнца и луны
Этот режим позволяет в точности отражать обстановку при съемке заходов солнца, общих ночных видов, фейерверков и неоновых реклам.

Ландшафтный режим
Этот режим позволяет выполнять съемку отдаленных объектов, таких как горы, например, и предотвращает фокусировку видеокамеры на стекло или металлическую решетку на окнах, когда Вы выполняете запись объектов позади стекла или решетки.

Режим низкой освещенности
Этот режим делает объекты ярче при недостаточном освещении.

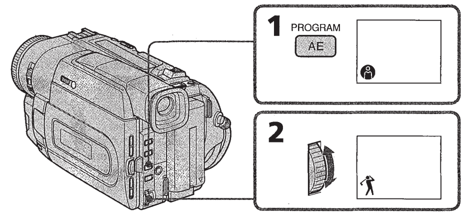


Using the PROGRAM AE function

(1) Press PROGRAM AE in the standby mode. The PROGRAM AE indicator appears.
(2) Turn the SEL/PUSH EXEC dial to select the desired PROGRAM AE mode.
The indicator changes as follows:

Использование функции PROGRAM AE

(1) Нажмите кнопку PROGRAM AE в режиме ожидания. Появится индикатор PROGRAM AE.
(2) Поверните диск SEL/PUSH EXEC для выбора нужного режима PROGRAM AE.
Индикатор будет изменяться следующим образом:



To turn the PROGRAM AE function off
Press PROGRAM AE.

Для выключения функции PROGRAM AE
Нажмите кнопку PROGRAM AE.

Using the PROGRAM AE function

Notes

- In the spotlight, sports lesson and beach & ski modes, you cannot take close-ups. This is because your camcorder is set to focus only on subjects in the middle to far distance.
- In the sunset & moon and landscape modes, your camcorder is set to focus only on distant subjects.
- The following functions do not work in the PROGRAM AE mode:
  - Slow shutter
  - Old movie
  - Bounce
- The following functions do not work in the low lux mode:
  - Digital effect
  - Overlap
  - Exposure
- If you press PROGRAM AE when using the NightShot function, the PROGRAM AE indicator flashes and the PROGRAM AE function does not work.

If you are recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp

Flickering or changes in colour may occur in the following modes. If this happens, turn the PROGRAM AE function off.

- Soft portrait mode
- Sports lesson mode

Использование функции PROGRAM AE

Примечания

- В режимах прожекторного освещения, спортивных состязаний, а также в пляжном и лыжном режиме Вы можете выполнять съемку крупным планом. Это объясняется тем, что Ваша видеокамера настроена для фокусировки только на объекты, находящиеся на среднем и дальнем расстояниях.
- В режиме захода солнца и луны, а также в ландшафтном режиме Ваша видеокамера настроена на фокусировку только на дальние объекты.
- Следующие функции не работают в режиме PROGRAM AE:
  - Медленный затвор
  - Старинное кино
  - Перескакивание
- Следующие функции не работают в режиме низкой освещенности:
  - Цифровой эффект
  - Наложение изображения
  - Экспозиция
- Если Вы нажмете кнопку PROGRAM AE во время использования функции ночной съемки, начнет мигать индикатор PROGRAM AE, и функция PROGRAM AE не будет работать.

Если Вы выполняете запись при использовании газоразрядной лампы, натриевой лампы или ртутной лампы

В следующих режимах может возникнуть мерцание или неустойчивые процессы. Если это произойдет, выключите функцию PROGRAM AE.

- Мягкий портретный режим
- Режим спортивных состязаний

Adjusting the exposure manually

You can manually adjust and set the exposure. When you turn your camcorder on, it will automatically be in the automatic exposure mode. This mode works to record subjects so that they are recorded slightly brighter than they actually are.
Adjust the exposure manually in the following cases:

- The subject is backlit
- Bright subject and dark background
- To record dark pictures (e.g. night scenes) faithfully

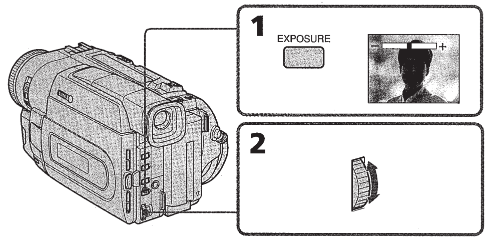
(1) Press EXPOSURE in the standby or recording mode.
The exposure indicator appears.
(2) Turn the SEL/PUSH EXEC dial to adjust the brightness.

Регулировка экспозиции вручную

Вы можете отрегулировать и установить экспозицию вручную. Если включите свою видеокамеру, она будет устанавливаться автоматически в режиме автоматической экспозиции. Этот режим функционирует для съемки объектов таким образом, что они записываются слегка ярче, чем они есть на самом деле.
Отрегулируйте экспозицию вручную в следующих случаях:

- Объект на фоне задней подсветки
- Яркий объект на темном фоне
- Для записи темных изображений (например, ночных сцен) с большой достоверностью

(1) Нажмите кнопку EXPOSURE в режиме ожидания или записи.
Появится индикатор экспозиции.
(2) Поверните диск SEL/PUSH EXEC для регулировки яркости.



To return to the automatic exposure mode

Press EXPOSURE again.

Для возврата в режим автоматической экспозиции

Нажмите кнопку EXPOSURE еще раз.

Note

When you adjust the exposure manually, the following function and modes do not work:

- Backlight
- Slow shutter
- Old movie

If you change the PROGRAM AE mode or slide NIGHTSHOT to ON

Your camcorder automatically returns to the automatic exposure mode.

Примечание

При выполнении регулировки вручную следующие функции и режимы не работают:

- Задняя подсветка
- Медленный затвор
- Старинное кино

Если Вы измените режим PROGRAM AE или передвинете переключатель NIGHTSHOT в положение ON

Ваша видеокамера автоматически вернется в режим автоматической экспозиции.

Focusing manually

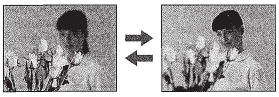
You can gain better results by manually adjusting the focus in the following cases:

- The autofocus mode is not effective when shooting
  - subjects through glass coated with water droplets
  - horizontal stripes
  - subjects with little contrast with backgrounds such as walls and sky
- When you want to change the focus from a subject in the foreground to a subject in the background
- Shooting a stationary subject when using a tripod

Фокусировка вручную

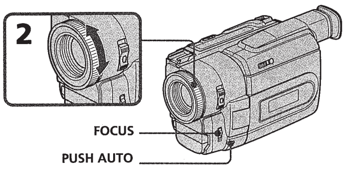
Вы можете получить лучшие результаты путем регулировки вручную в следующих случаях:

- Режим автоматической фокусировки является неэффективным при выполнении съемки
  - объектов через покрытое каплями стекло
  - горизонтальных полос
  - объектов с малой контрастностью на таком фоне, как стена или небо
- Если Вы хотите выполнить изменение фокусировки с объекта на переднем плане на объект на заднем плане
- При выполнении съемки стационарных объектов с использованием треноги



(1) Set FOCUS to MANUAL in the standby or recording mode. The ☞ indicator appears.
(2) Turn the focus ring to sharpen focus.

(1) Установите переключатель FOCUS в положение MANUAL в режиме готовности или режиме записи. Появится индикатор ☞.
(2) Поверните кольцо фокусировки для получения четкой фокусировки.



To return to the autofocus mode

Set FOCUS to AUTO.

To record distant subjects

When you press FOCUS down to INFINITY. The lens focuses on and ▲ indicator appears. When you release FOCUS, your camcorder returns to the manual focus mode. Use this mode when your camcorder focuses on near objects even though you are trying to shoot a distant object.

To shoot with auto focusing momentarily

Press PUSH AUTO.
The auto focus functions while you are pressing PUSH AUTO.
Use this button to focus on one subject and then another with smooth focusing.
When you release PUSH AUTO, manual focusing resumes.

Shooting in relatively dark places or shooting fast-moving subjects in relatively bright places

Shoot at the "W" (wide-angle) position after focusing at the "T" (telephoto) position.

When you shoot close to the subject

Focus at the end of the "W" (wide-angle) position.

The following indicators may appear

▲ when recording a distant subject.
👤 when the subject is too close to focus on.

Для возвращения в режим фокусировки

Установите переключатель FOCUS в положение AUTO.

Для съемки удаленных объектов

Если Вы нажмете вниз кнопку FOCUS в положение INFINITY. Объектив выполнит фокусировку, и появится индикатор ▲. Если Вы отпустите кнопку FOCUS, Ваша видеокамера вернется в режим ручной фокусировки. Используйте этот режим, если Ваша видеокамера выполняет фокусировку на ближние объекты, даже если Вы пытаетесь выполнить съемку отдаленного объекта.

Для выполнения съемки с мгновенной фокусировкой

Нажмите кнопку PUSH AUTO.
При нажатии кнопки PUSH AUTO сработает функция автоматической фокусировки.
Используйте эту кнопку для выполнения фокусировки на один объект, а затем на другой, выдерживая плавную фокусировку при этом.
После того, как Вы отпустите кнопку PUSH AUTO, возобновится плавная фокусировка.

Съемка в относительно темных местах или съемка быстро движущихся объектов в относительно ярких местах

Выполняйте съемку в положении "W" (широкоугольное) после фокусировки в положении "T" (телефото).

Если Вы выполняете съемку вблизи объекта

Выполните фокусировку в конце положения "W" (широкоугольное).

Следующие индикаторы могут появиться

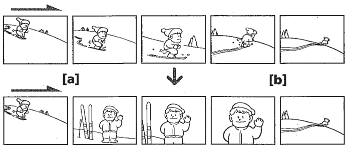
▲ при записи удаленного объекта.
👤 если объект находится слишком близко, чтобы выполнить фокусировку на него.

Inserting a scene

You can insert a scene in the middle of a recorded tape by setting the start and end points. The previously recorded frames between these start and end points will be erased. Use the Remote Commander for this operation.

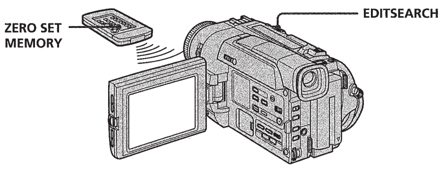
Вставка эпизода

Вы можете вставить эпизод в середине записанной ленты путем установки точек начала и окончания. Предыдущие записанные кадры между этими точками начала и окончания будут стерты. Используйте пульт дистанционного управления для этой операции.



(1) While your camcorder is in the standby mode, keep pressing EDITSEARCH, and release the button at the insert end point **[b]**.
(2) Press ZERO SET MEMORY. The ZERO SET MEMORY indicator flashes and the tape counter resets to zero.
(3) Keep pressing the – ⊜ side of EDITSEARCH and release the button at the insert start point **[a]**.
(4) Press START/STOP to start recording. The scene is inserted. Recording stops automatically at the tape counter zero point. Your camcorder returns to the standby mode.

(1) В режиме ожидания видеокамеры, держите нажатой кнопку EDITSEARCH и отпустите кнопку в точке окончания эпизода **[b]**.
(2) Нажмите кнопку ZERO SET MEMORY. Начнет мигать индикатор ZERO SET MEMORY, а счетчик ленты будет установлен в нулевое положение.
(3) Держите нажатой сторону – ⊜ кнопки EDITSEARCH и отпустите кнопку в точке начала эпизода **[a]**.
(4) Нажмите кнопку START/STOP для начала записи. Эпизод вставлен. Запись остановится автоматически в нулевой точке счетчика ленты. Ваша видеокамера вернется в режим ожидания.



Inserting a scene

Notes
- The zero set memory function works only for tapes recorded in the Digital8 Ð system.
- The picture and the sound may be distorted at the end of the inserted section when it is played back.

If you re-record on the section which contains a non-recorded section
The zero set memory function may not work correctly.

When START/STOP MODE is set to ⊥ or 5SEC
You cannot use the zero set memory function.

Вставка эпизода

Примечания
- Функция памяти нуля не работает для лент, записанных в цифровой системе Digital8 Ð.
- Изображение и звук могут быть искажены в конце вставленного эпизода при воспроизведении.

Если Вы выполняете перезапись на участке ленты, где имеется незаписанный участок
Функция памяти нуля может не работать надлежащим образом.

Если команда START/STOP установлена в положение ⊥ или 5SEC
Вы не можете использовать функцию памяти нуля.

— Advanced Playback Operations —

Playing back a tape with picture effects

During playback, you can process a scene using the picture effect functions: NEG.ART, SEPIA, B&W and SOLARIZE.

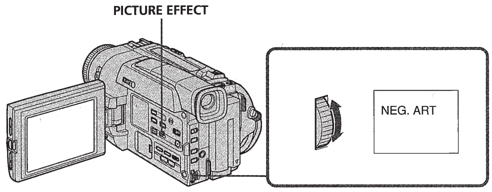
During playback, press PICTURE EFFECT and turn the SEL/PUSH EXEC dial until the desired picture effect indicator (NEG.ART, SEPIA, B&W or SOLARIZE) flashes.
For details of each picture effect function, see page 51.

– Усовершенствованные операции воспроизведения –

Воспроизведение ленты с эффектами изображения

Во время воспроизведения, Вы можете видоизменять изображение с помощью функций: NEG.ART, SEPIA, B&W и SOLARIZE.

Во время воспроизведения, нажмите кнопку PICTURE EFFECT и поворачивайте диск SEL/PUSH EXEC до тех пор, пока не начнет мигать индикатор нужного цифрового (NEG.ART, SEPIA, B&W и SOLARIZE). Подробные сведения по каждой функции цифровых эффектов приведены на стр. 51.



To cancel the picture effect function
Press PICTURE EFFECT.

Notes
- The picture effect function works only for tapes recorded in the Digital8 Ð system.
- You cannot externally input scenes using the picture effect function.
- To record pictures that you have processed using the picture effect function, record the pictures on the VCR.

Pictures processed by the picture effect function
Pictuers processed by the picture effect function are not output through the i DV OUT jack.

When you set the POWER switch to OFF or stop playing back
The picture effect function is automatically canceled.

Для отмены функции цифровых эффектов
Нажмите кнопку PICTURE EFFECT.

Примечания
- Функция эффектов изображения работает только для лент, записанных в цифровой системе Digital8 Ð.
- Вы не можете вводить новые эпизоды с помощью функции эффектов изображения.
- Для записи изображений, видоизмененных с помощью функции эффектов изображения, запишите изображения на КВМ, используя Вашу видеокамеру в качестве плейера.

Изображения, видоизмененные с помощью функции эффектов изображения
Изображения, видоизмененные с помощью функции эффектов изображения, не передаются через выходное гнездо i DV OUT.

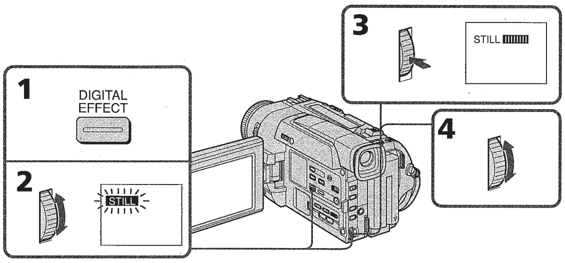
Если Вы установили переключатель POWER в положение OFF или остановили воспроизведение
Функция эффектов изображения будет автоматически отменена.

Playing back a tape with digital effects

During playback, you can process a scene using the digital effect functions: STILL, FLASH, LUMI. and TRAIL.
(1) During playback, press DIGITAL EFFECT and turn the SEL/PUSH EXEC dial until the desired digital effect indicator (STILL, FLASH, LUMI. or TRAIL) flashes.
(2) Press the SEL/PUSH EXEC dial.
The digital effect indicator lights up and the bars appear. In the STILL or LUMI. mode, the picture where you press the SEL/PUSH EXEC dial is stored in memory as a still picture.
(3) Turn the SEL/PUSH EXEC dial to adjust the effect.
For details of each digital effect function, see page 53.

Воспроизведение ленты с цифровыми эффектами

Во время воспроизведения, Вы можете видоизменять изображение с помощью функций: STILL, FLASH, LUMI. и TRAIL.
(1) Во время воспроизведения, нажмите кнопку DIGITAL EFFECT и поворачивайте диск SEL/PUSH EXEC до тех пор, пока не начнет мигать индикатор нужного цифрового эффекта (STILL, FLASH, LUMI. или TRAIL).
(2) Нажмите диск SEL/PUSH EXEC.
Высветится индикатор цифрового эффекта и появятся полосы. В режиме STILL или LUMI. Изображение, на котором Вы нажмете кнопку диск SEL/PUSH EXEC, будет занесено в память как неподвижное изображение.
(3) Поверните диск SEL/PUSH EXEC для регулировки эффекта изображения.
Подробные сведения по каждой функции цифровых эффектов приведены на стр. 53.



To cancel the digital effect function
Press DIGITAL EFFECT.

Для отмены функции цифровых эффектов
Нажмите кнопку DIGITAL EFFECT.

Playing back a tape with digital effects

Notes
- The digital effect function works only for tapes recorded in the Digital8 system.
- You cannot process externally input scenes using the digital effect function.
- To record pictures that you have processed using the digital effect function, record the pictures on the VCR.

Picture processed by the digital effect function
Pictures processed by the digital effect function are not output through the i DV OUT jack.

When you set the POWER switch to OFF or stop playing back
The digital effect function is automatically canceled.

Воспроизведение ленты с цифровыми эффектами

Примечания
- Функция цифровых эффектов работает только для лент, записанных в цифровой системе Digital8.
- Вы не можете видоизменять введенные эпизоды с помощью функции цифровых эффектов.
- Для записи изображений, видоизмененных с помощью функции цифровых эффектов, запишите изображения на КВМ.

Изображения, видоизмененные с помощью функции цифровых эффектов
Изображения, видоизмененные с помощью функции цифровых эффектов, не передаются через выходное гнездо i DV OUT.

Если Вы установили переключатель POWER в положение OFF или остановили воспроизведение
Функция цифровых эффектов будет автоматически отменена.

Quickly locating a scene using the zero set memory function

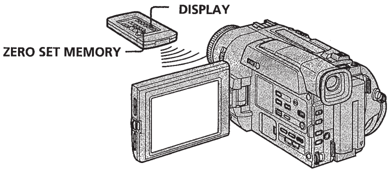
Your camcorder goes forward or backward to automatically stop at a desired scene having a tape counter value of "0:00:00". Use the Remote Commander for this operation.
Use this function, for example, to view a desired scene later on during playback.

(1) In the playback mode, press DISPLAY.
(2) Press ZERO SET MEMORY at the point you want to locate later. The tape counter shows "0:00:00" and the ZERO SET MEMORY indicator flashes.
(3) Press ■ when you want to stop playback.
(4) Press ◀◀ to rewind the tape to the tape counter's zero point. The tape stops automatically when the tape counter reaches approximately zero. The ZERO SET MEMORY indicator disappears and the time code appears.
(5) Press ▶. Playback starts from the tape counter's zero point.

Быстрое отыскание эпизода с помощью функции памяти нулевой отметки

Ваша видеокамера выполняет продвижение вперед или назад с автоматической остановкой в нужном эпизоде, где показание счетчика ленты равно "0:00:00". Используйте пульт дистанционного управления для этой операции.
Используйте эту функцию, например, для просмотра нужного эпизода позже во время воспроизведения.

(1) В режиме воспроизведения нажмите кнопку DISPLAY.
(2) Нажмите кнопку ZERO SET MEMORY в месте, которое Вы захотите найти позже. Показание счетчика ленты станет равным "0:00:00", и начнет мигать индикатор ZERO SET MEMORY.
(3) Нажмите кнопку ■, если Вы захотите остановить воспроизведение.
(4) Нажмите кнопку ◀◀ для ускоренной перемотки ленты назад к нулевой точке счетчика ленты. Лента остановится автоматически, если счетчик ленты достигнет нулевой отметки. Индикатор ZERO SET MEMORY исчезнет, и появится код времени.
(5) Нажмите кнопку ▶. Воспроизведение начнется с нулевой отметки счетчика ленты.



Notes
- The zero set memory function works only for tapes recorded in the Digital8 system.
- When you press ZERO SET MEMORY before rewinding the tape, the zero set memory function will be canceled.
- There may be a discrepancy of several seconds from the time code.
- The zero set memory function may not work when there is a blank portion between pictures on a tape.

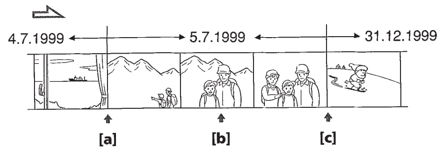
Примечания
- Функция памяти нулевой отметки работает только для лент, записанных в цифровой системе Digital8.
- Если Вы нажмете кнопку ZERO SET MEMORY до начала обратной перемотки ленты, то функция памяти нулевой отметки будет отменена.
- Может быть расхождение в несколько секунд между кодом времени и действительным временем.
- Функция памяти нулевой отметки может не работать в случае, если имеется незаписанный участок между изображениями на ленте.

Searching a recording by date

You can automatically search for the point where the recording date changes and start playback from that point **(Date search)**. Use the Remote Commander for this operation.
Use this function to check where recording dates change or to edit the tape at each recording date.

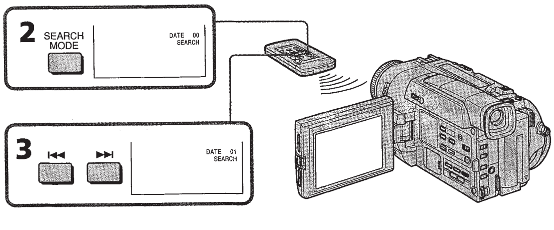
Поиск записи по дате

Вы можете выполнять автоматически поиск места, где изменяется дата записи и начинать воспроизведение с этого места **(поиск даты)**. Используйте пульт дистанционного управления для таких операций.
Используйте эту функцию для проверки, где изменяются даты записи, или же для выполнения монтажа ленты в каждом месте записи даты.



(1) Set the POWER switch to PLAYER.
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(3) When the current position is **[b]**, press ⏮ to search towards **[a]** or press ⏭ to search towards **[c]**. Your camcorder automatically starts playback at the point where the date changes.
Each time you press ⏮ or ⏭, the camcorder searches for the previous or next date.

(1) Установите переключатель POWER в положение PLAYER.
(2) Нажимайте повторно кнопку SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор поиска даты.
Индикатор будет изменяться следующим образом:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикатора
(3) Если текущее положение соответствует варианту **[b]**, нажмите кнопку ⏮ для выполнения поиска в направлении **[a]** или нажмите кнопку ⏭ для выполнения поиска в направлении **[c]**. Ваша видеокамера автоматически начнет воспроизведение в месте, где изменяется дата.
Всякий раз при нажатии кнопки ⏮ или ⏭, видеокамера будет выполнять поиск предыдущей или следующей даты.



Searching a recording by date

To stop searching
Press ■.

Notes on the date seach mode
- The date search works only for tapes recorded in the Digital8 system.
- If one day's recording is less than one minute, your camcorder may not accurately find the point where the recording date changes.

If a tape has a blank portion in the recorded portions
The date search function will not work correctly.

Поиск записи по дате

Для остановки поиска
Нажмите кнопку ■.

Примечания по режиму поиска даты
- Режим поиска даты функционирует только для лент, записанных в цифровой системе Digital8.
- Если в какой-либо из дней Ваша запись продолжалась менее одной минуты, Ваша видеокамера может точно не найти место, где изменяется дата записи.

Если на записанной ленте имеются незаписанные участки
Функция поиска даты будет работать неправильно.

Searching for a photo – Photo search/Photo scan

You can search for the recorded still picture **(photo search)**.
You can also search for still pictures one after another and display each picture for five seconds automatically **(photo scan)**. Use the Remote Commander for these operations.

Searching for a photo

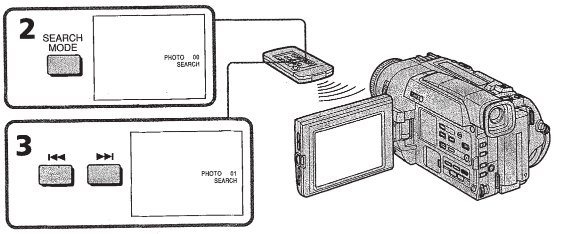
(1) Set the POWER switch to PLAYER.
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the photo search indicator appears.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(3) Press ⏮ or ⏭ to select the photo for playback. Each time you press ⏮ or ⏭, the camcorder searches for the previous or next photo. Your camcorder automatically starts playback from the photo.

Поиск фото – Фотопоиск/Фотосканирование

Вы можете выполнять поиск записанного неподвижного изображения **(фотопоиск)**.
Вы также можете выполнять поиск неподвижных изображений одно за другим и отображать каждое изображение пять секунд автоматически **(фотосканирование)**. Используйте пульт дистанционного управления для этих операций.

Поиск фото

(1) Установите переключатель POWER в положение PLAYER.
(2) Нажимайте повторно на пульте дистанционного управления кнопку SEARCH MODE до тех пор, пока не появится индикатор фотопоиска.
Индикатор будет изменяться следующим образом:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикатора
(3) Нажмите кнопку ⏮ или ⏭, чтобы выбрать фото для воспроизведения. Всякий раз при нажатии ⏮ или ⏭ видеокамера начинает поиск предыдущего или следующего фото. Ваша видеокамера автоматически начнет воспроизведение с этого фото.



To stop searching

Press ■.

If a tape has a blank portion in the recorded portions

The photo search function may not work correctly.

Для остановки поиска

Нажмите кнопку ■.

Если на записанной ленте имеются незаписанные участки

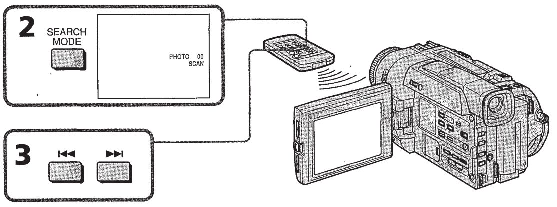
Функция фотопоиска будет работать неправильно.

Scanning photo

(1) Set the POWER switch to PLAYER.
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the photo scan indicator appears.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(3) Press ⏮ or ⏭.
Each photo is played back for about 5 seconds automatically.

Сканирование фото

(1) Установите переключатель POWER в положение PLAYER.
(2) Нажимайте повторно на пульте дистанционного управления кнопку SEARCH MODE до тех пор, пока не появится индикатор фотосканирования.
Индикатор будет изменяться следующим образом:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → без индикатора
(3) Нажмите кнопку ⏮ или ⏭.
Каждое фото будет автоматически отображаться примерно 5 секунд.



To stop scanning

Press ■.

Note

The photo search and photo scan work only for tapes recorded in the Digital8 Ð system.

Для остановки сканирования

Нажмите кнопку ■.

Примечание

Фотопоиск и фотосканирование функционируют только для лент, записанных в цифровой системе Digital8 Ð.

Dubbing a tape

Using the A/V connecting cable or S video connecting cable (not supplied)

Connect your camcorder to the VCR using the A/V connecting cable supplied with your camcorder.
Set the input selector on the VCR to LINE, if available.

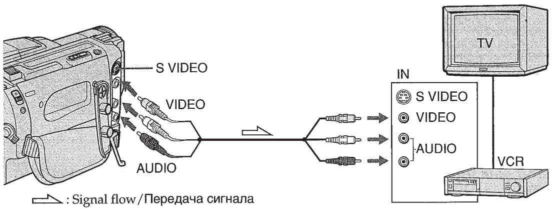
(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Set the POWER switch to PLAYER.
(3) Play back the recorded tape on your camcorder.
(4) Start recording on the VCR.

Перезапись ленты

При использовании соединительного кабеля аудио/видео или кабеля S видео (не прилагается)

Подсоедините Вашу видеокамеру к КВМ с помощью соединительного кабеля аудио/видео, который прилагается к Вашей видеокамере.
Установите селекторный переключатель входного сигнала на КВМ в положение LINE, если такое имеется.

(1) Вставьте незаписанную ленту (или ленту, на которую Вы хотите выполнить запись) в КВМ и вставьте записанную ленту в Вашу видеокамеру.
(2) Установите переключатель POWER в положение PLAYER.
(3) Начните воспроизведение записанной ленты на Вашей видеокамере.
(4) Начните запись на Вашем КВМ.



⇨ : Signal flow/Передача сигнала

When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Если Вы закончили перезапись ленты

Нажмите кнопку ■ как на видеокамере, так и на КВМ.

If you have displayed the screen indicators on the TV

Make the indicators disappear by pressing SEARCH MODE on the Remote Commander, DISPLAY or DATA CODE so that they will not be superimposed on the edited tape.

You can edit on VCRs that support the following systems

8 8 mm, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC, β Betamax, MiniDV mini DV, DV DV or Ð Digital8

If your VCR is a monaural type

Connect the yellow plug for video and the white plug for audio on both your camcorder and the VCR. You do not need to connect the red plug. With this connection, the sound will be monaural.

Connect using an S video cable (not supplied) to obtain high-quality pictures

With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (not supplied) to the S video jacks of both your camcorder and the VCR.

To perform a more precise editing

Connect a LANC cable (not supplied) to your camcorder and other video equipment having fine synchro-editing function.

При отображении экранных индикаторов на экране телевизора

Добейтесь того, чтобы индикаторы исчезли, нажимая кнопку SEARCH MODE на пульте дистанционного управления, кнопку DISPLAY или DATA CODE, так чтобы они не были наложены на монтажную ленту.

Вы можете выполнять монтаж на КВМ, которые поддерживают следующие системы

8 8 мм, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC, β Betamax, MiniDV mini DV, DV DV или Ð Digital8

Если Ваш КВМ монофонического типа

Подсоедините желтый штекер для видеосигнала, а белый штекер для аудиосигнала к видеокамере и к КВМ. Вам не нужно подсоединять красный штекер. При таком подсоединении звук будет монофоническим.

Выполните подсоединение с помощью кабеля S видео (не прилагается) для получения высококачественных изображений

При таком подсоединении Вам не нужно подсоединять желтый (видео) штекер соединительного кабеля аудио/видео.
Подсоедините кабель S видео (не прилагается) к гнездам S видео на Вашей видеокамере и КВМ.

Для выполнения более точного монтажа

Подсоедините кабель LANC (не прилагается) к Вашей видеокамере и другой видеоаппаратуре, что позволит Вам задействовать функцию синхронного монтажа.

Dubbing a tape

Using the i.LINK cable

Simply connect the VMC-IL4415/IL4435/2DV/4DV i.LINK cable (not supplied) to i DV OUT and to DV IN of the DV products. With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing. You cannot dub the screen indicators.

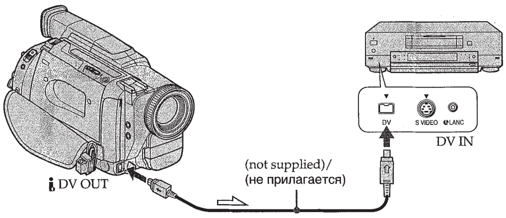
(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Set the POWER switch to PLAYER.
(3) Play back the recorded tape on your camcorder.
(4) Start recording on the VCR.

Перезапись ленты

Использование кабеля i.LINK

Просто подсоедините кабель VMC-IL4415/IL4435/2DV/4DV i.LINK (не прилагается) к гнезду i DV OUT и гнезду DV IN цифровых видеоизделий. С помощью соединения цифровым кабелем видео- и аудиосигналы передаются в цифровой форме для последующего высококачественного монтажа. Вы не можете удалить экранные индикаторы.

(1) Вставьте незаписанную ленту (или ленту, на которую хотите выполнить запись) в КВМ и вставьте записанную ленту в видеокамеру.
(2) Установите переключатель POWER в положение PLAYER.
(3) Начните воспроизведение записанной ленты на Вашей видеокамере.
(4) Начните запись на КВМ.



⇨ : Signal flow/Передача сигнала

When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Note on tapes that are not recorded in the Digital8 Ð system

The picture may fluctuate. This is not a malfunction.

During playback of tapes recorded in the Hi8/standard 8 system

Digital signals are output as the image signals from the i DV OUT jack.

You can connect one VCR only using the i.LINK cable.

During digital editting

You cannot use DIGITAL EFFECT button functions.

Если Вы закончили перезапись ленты

Нажмите кнопку ■ как на Вашей видеокамере, так и на КВМ.

Примечание по лентам, которые были записаны в цифровой системе Digital8 Ð

Возможно подрагивание изображения. Это не является неисправностью.

Во время воспроизведения лент, записанных в системе Hi8/стандартной системе 8

Цифровые сигналы выводятся в качестве сигналов изображения через гнездо i DV OUT.

Вы можете подсоединить только один КВМ с помощью кабеля i.LINK

Во время цифрового монтажа

Вы не можете использовать функции кнопок DIGITAL EFFECT.

— Flash Memory Operations —

Using the flash memory function – introduction

– DCR-TRV510E only

Your camcorder has a built-in flash memory with a capacity of 2MB.
The built-in flash memory can record still images, exchange still image data with tapes and play back and delete the still image data. If you use the supplied accessories, you can input still image data to your PC. This chapter explains the functions that are available using the built-in flash memory.

On file format (JPEG)

This unit compresses image data in JPEG format (extension .jpg) with thumbnail data for the index screen. The index screen data is visible only on this unit.

Typical image data file name

ex. DSC00001.jpg

During recording in the built-in flash memory

Do not turn the power off nor remove the battery pack.
You can record only still images in the built-in flash memory. You cannot record sounds.

When using a video light (not supplied) or similar equipment mounted on the intelligent accessory shoe

Recording an image in the built-in flash memory may result in a temporary power shortage in the accessory shoe, causing the video light to go out. This is not a malfunction.

If the MEMORY FULL indicator ⊘ appears in the viewfinder or on the LCD screen

You cannot use the built-in flash memory. See "Warning indicators and messages" (p. 123) for more information.

— Операции с флэш-памятью —

Использование функции флэш-памяти - Введение

– Только модель DCR-TRV510E

В Вашей видеокамере имеется встроенная флэш-память емкостью 2 Мб.
Встроенная флэш-память позволяет записывать изображения, выполнять обмен данных изображения с лентами, а также воспроизводить и удалять данные неподвижных изображений. При использовании прилагаемых принадлежностей Вы можете вводить данные неподвижных изображений в Ваш компьютер. В данной главе приводится объяснение функций с использованием встроенной флэш-памяти.

О формате файлов (JPEG)

Данная видеокамера сжимает данные изображения в формат JPEG (с расширением .jpg) и с данными дополнительных параметров. Данные индексного экрана видны только на Вашей видеокамере.

Типичное имя файла данных изображения

прим. DSC00001.jpg.

Во время записи во встроенную флэш-память

Не выключайте питание и не снимайте батарейный блок.
Вы можете записывать только неподвижные изображения во встроенную флэш-память. Вы не можете записывать звуки.

При использовании видеолампы (не прилагается) или подобного оборудования, устанавливаемого на держателе для вспомогательных принадлежностей

Запись изображения во встроенную флэш-память может привести к временной нехватке питания на держателе для вспомогательных принадлежносте, вызываемой функционированием лампы.

Если в видоискателе или на экране ЖКД появится индикатор ⊘ MEMORY FULL

Вы не можете использовать встроенную флэш-память. См. раздел "Предупреждающие индикаторы и сообщения" (стр. 129).

Using the flash memory function – introduction

Selecting the image quality mode – QUALITY

You can select the image quality mode in still picture recording. If you do not make any selection, your camcorder automatically records in STANDARD mode.

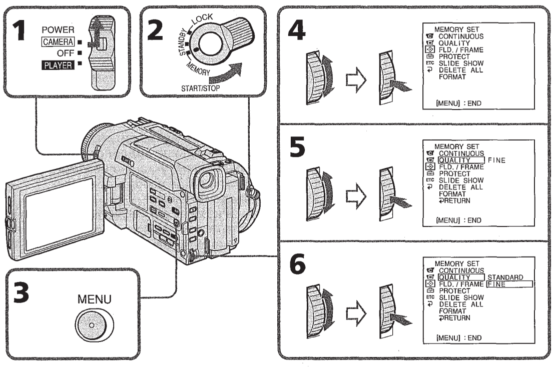
(1) Set the POWER switch to CAMERA.
(2) Turn STANDBY to MEMORY.
(3) Press MENU to display the MENU settings.
(4) Turn the SEL/PUSH EXEC dial to select ◈, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select QUALITY, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select the desired image quality, then press the dial. Press MENU to make the MENU settings disappear.

Использование функции флэш-памяти - Введение

Выбор режима качества изображения - QUALITY

Вы можете выбирать режим качества изображения при записи неподвижных изображений. Если Вы не сделаете никакого выбора, Ваша видеокамера будет автоматически выполнять запись в режиме STANDARD.

(1) Установите переключатель POWER в положение CAMERA.
(2) Поверните переключатель STANDBY в положение MEMORY.
(3) Нажмите кнопку MENU для отображения установок MENU.
(4) Поверните диск SEL/PUSH EXEC для выбора установки ◈, а затем нажмите диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки QUALITY, а затем нажмите диск.
(6) Поверните диск SEL/PUSH EXEC для выбора желаемого качества изображения, а затем нажмите диск. Нажмите кнопку MENU, чтобы установки MENU исчезли.



Using the flash memory function – introduction

Image quality settings

Setting	Meaning (indicator on the screen)
STANDARD	This is the standard image quality. The image is compressed to about 1/10. (STD)
FINE	Use this mode when you want to record high quality images. The image is compressed to about 1/6. (FINE)

Differences in image quality mode

Recorded images are compressed in JPEG format before being stored into the memory. The memory capacity allotted to each image varies depending on the selected image quality mode. Details are shown in the table below. (The number of pixels is 640 x 480, regardless of image quality mode. The data size before compression is about 600 KB.)

Image quality mode	Memory capacity	Recordable number of images*
FINE	About 100 KB	About 20 images
STANDARD	About 60 KB	About 33 images

* Depending on the complexity of the subject.

Note

In some cases, changing the image quality mode may not affect the image quality, depending on the types of images you are shooting.

Использование функции флэш-памяти - Введение

Установки качества изображения

Установка	Значение (индикатор на экране)
STANDARD	Это является стандартным качеством изображения. Изображение сжимается примерно до 1/10. (STD)
FINE	Используйте этот режим, если Вы хотите выполнить высококачественную запись изображений. Изображение сжимается примерно до 1/6. (FINE)

Отличия режима качества изображения

Перед занесением в память записанные изображения сжимаются в формате JPEG. Емкость памяти, предназначенная для каждого изображения, отличается в зависимости от выбранного режима качества изображения. Подробности показаны в приведенной ниже таблице. (Количество элементов изображения равно 640 x 480, независимо от режима качества изображения. Размер данных до сжатия составляет около 600 Кб.)

Режим качества изображения	Емкость памяти	Количество записываемых изображений*
FINE	Около 100 Кб	Около 20 изображений
STANDARD	Около 60 Кб	Около 33 изображений

* В зависимости от сложности объекта

Примечание

В некоторых случаях изменение режима качества изображения может не влиять на качество изображения, в зависимости от типов изображений, которые Вы снимаете.

Using the flash memory function – introduction

Selecting the recording mode – FIELD/FRAME

You can select the recording mode in still picture recording. If you do not make any selection, your camcorder automatically records in FIELD mode.

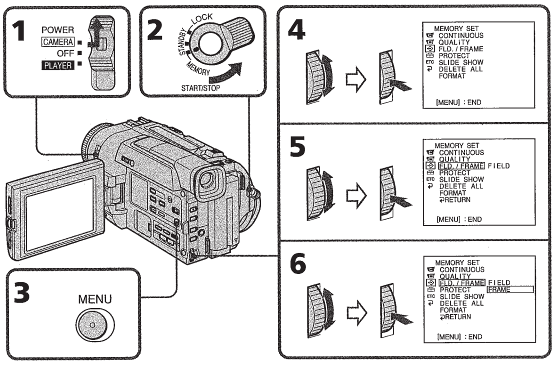
(1) Set the POWER switch to CAMERA.
(2) Turn STANDBY to MEMORY.
(3) Press MENU to display the MENU settings.
(4) Turn the SEL/PUSH EXEC dial to select ⊕ , then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select FLD./FRAME, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select the desired recording mode, then press the dial. Press MENU to make the MENU settings disappear.

Использование функции флэш-памяти - Введение

Выбор режима записи - FIELD/FRAME

Вы можете выбирать режим качества записи при записи неподвижных изображений. Если Вы не сделаете никакого выбора, Ваша видеокамера будет автоматически выполнять запись в режиме FIELD.

(1) Установите переключатель POWER в положение CAMERA.
(2) Поверните переключатель STANDBY в положение MEMORY.
(3) Нажмите кнопку MENU для отображения установок MENU.
(4) Поверните диск SEL/PUSH EXEC для выбора установки ⊕ , а затем нажмите диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки FLD./FRAME, а затем нажмите диск.
(6) Поверните диск SEL/PUSH EXEC для выбора нужного режима записи, а затем нажмите диск. Нажмите кнопку MENU, чтобы установки MENU исчезли.



Using the flash memory function – introduction

Recording mode settings

Setting	Meaning (indicator on the screen)
FIELD	Field recording. Your camcorder compensates for camera-shake. (no indicator)
FRAME	Frame recording. Your camcorder records images in high quality. (FRAME)

Note
When recording fast-moving subjects in FRAME mode, the recorded image is blurry.

Использование функции флэш-памяти - Введение

Установки режимов записи

Установка	Значение (индикатор на экране)
FIELD	Запись в режиме поля. Ваша видеокамера компенсирует подрагивания аппарата (без индикатора).
FRAME	Запись в режиме кадра. Ваша видеокамера выполняет высококачественную запись изображений (FRAME).

Примечание
При записи быстро движущихся объектов в режиме FRAME, записанное изображение будет размытым.

Recording still images in the built-in flash memory – Memory photo recording

– DCR-TRV510E only

You can record still images in the built-in flash memory.

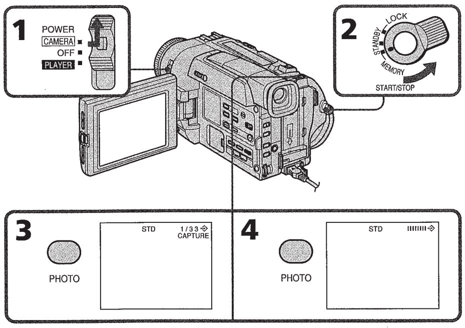
(1) Set the POWER switch to CAMERA.
(2) Turn STANDBY to MEMORY.
(3) Keep pressing PHOTO lightly. The picture freezes and the CAPTURE indicator appears in the viewfinder or on the LCD screen. Recording does not start yet.
(4) Press PHOTO deeper. The image displayed on the screen will be recorded in the built-in flash memory. Recording is complete when the bar scroll indicator disappears.

Запись неподвижных изображений во встроенную флэш-память – Фотозапись с сохранением в памяти

– Только модель DCR-TRV510E

Вы можете записать неподвижные изображения во встроенную флэш-память.

(1) Установите переключатель POWER в положение CAMERA.
(2) Поверните переключатель STANDBY в положение MEMORY.
(3) Держите слегка нажатой кнопку PHOTO. Изображение будет “заморожено”, и в видоискателе или на экране ЖКД появится индикатор CAPTURE. Запись пока не начнется.
(4) Нажмите кнопку PHOTO сильнее. Изображение, отображаемое на экране, будет записано во встроенную флэш-память. Запись считается завершенной, если исчезнет перемещающийся полосатый индикатор.



Recording still images in the built-in flash memory – Memory photo recording

When the STANDBY switch is set to MEMORY
The following functions do not work:
– Wide mode
– Digital effect
– Picture effect
– NightShot +Slow shutter
– Low lux mode of PROGRAM AE

When you are recording a still image
You can neither turn off the power nor press PHOTO.

When you press the PHOTO button on the Remote Commander
Your camcorder immediately records the image that is on the screen when you press the button.

Recording images continuously

You can record still pictures continuously. Select one of the two modes in the MENU settings (p. 100) described below before recording.

Continuous mode (CONTINUOUS: ON) [a]
You can record 3 or 4 pictures continuously.

Multi screen mode (CONTINUOUS: MULTI SCRN) [b]
You can record 9 still pictures continuously on a single page.

Запись неподвижных изображений во встроенную флэш-амять - Фотозапись с сохранением в памяти

Если переключатель STANDBY установлен в положение MEMORY
Следующие функции не работают:
– Широкоэкранный режим
– Цифровой эффект
– Эффект изображения
– Ночная съемка +медленный затвор
– Режим низкой освещенности PROGRAM AE

При записи неподвижного изображения
Вы не можете ни выключать питание, ни нажимать кнопку PHOTO.

Если Вы нажмете кнопку PHOTO на пульте дистанционного управления
Если Вы нажмете кнопку, Ваша видеокамера тотчас же запишет изображение, которое видно на экране.

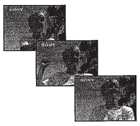
Запись изображений непрерывно

Вы можете записывать неподвижные изображения непрерывно. Перед записью выберите один из двух режимов в установках MENU (стр. 100), описанных ниже.

Непрерыный режим (CONTINUOUS: ON) [a]
Вы можете непрерывно записывать 3 или 4 изображения.

Многоэкранный режим (CONTINUOUS: MULTI SCRN) [b]
Вы можете непрерывано записывать 9 изображений на одной странице.

[a]



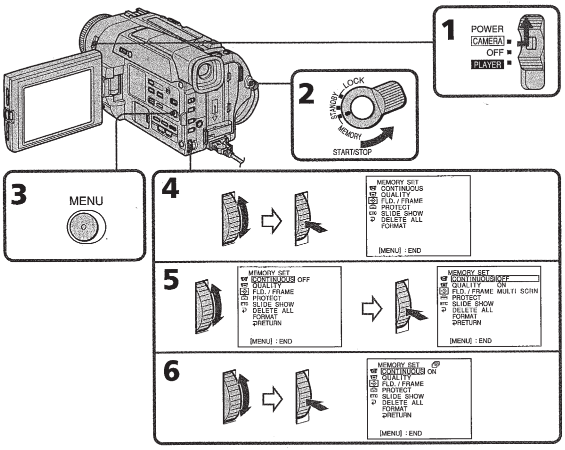
[b]

Recording still images in the built-in flash memory – Memory photo recording

(1) Set the POWER switch to CAMERA.
(2) Turn STANDBY to MEMORY.
(3) Press MENU to display the MENU settings.
(4) Turn the SEL/PUSH EXEC dial to select ⟐ , then press the dial.
(5) Turn the SEL/PUSH EXEC to select CONTINUOUS, then press the dial.
(6) Turn the SEL/PUSH EXEC to select the desired setting, then press the dial.
(7) Press MENU to make the MENU settings disappear.

Запись неподвижных изображений во встроенную флэш-память - Фотозапись с сохранением в памяти

(1) Установите переключатель POWER в положение CAMERA.
(2) Поверните переключатель STANDBY в положение MEMORY.
(3) Нажмите кнопку MENU для отображения установок MENU.
(4) Поверните диск SEL/PUSH EXEC для выбора установки ⟐ , а затем нажмите диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки CONTINUOS, а затем нажмите диск.
(6) Поверните диск SEL/PUSH EXEC для выбора нужной установки, а затем нажмите диск.
(7) Нажмите кнопку MENU, чтобы установки MENU исчезли.



Recording still images in the built-in flash memory – Memory photo recording

Continuous shooting settings

Setting	Meaning (indicator on the screen)
OFF	The unit shoots one image at a time. (no indicator)
ON	The unit shoots 3 or 4 still images at about 1 sec intervals. (⧉)
MULTI SCRN	The unit shoots 9 still images at about 0.4 sec intervals and displays the images on a single page divided into 9 boxes. (▦)

Number of images in continuous shooting
The number of images you can shoot continuously varies depending on the image quality mode.

FINE:	3 images
STANDARD:	4 images

Запись неподвижных изображений во встроенную флэш-память - Фотозапись с сохранением в памяти

Установки непрерывной съемки

Установка	Значение (индикатор на экране)
OFF	Аппарат снимает по одному изображению за раз (без индикатора)
ON	Аппарат снимает 3 или 4 неподвижных изображения примерно с 1-секундными интервалами (⧉).
MULTI SCRN	Аппарат снимает 9 неподвижных изображений примерно с 0,4-секундными интервалами и отображает изображения на одной странице, разделенной на 9 прямоугольников. (▦)

Количество изображений при непрерывной съемке
Количество изображений, которые Вы можете снимать непрерывно, изменяется в зависимости от режима качества изображения.

FINE:	3 изображения
STANDARD:	4 изображения

Recording an image from a recorded tape as a still image

– DCR-TRV510E only
Your camcorder can read moving picture data recorded on a tape and record it as a still image in the built-in flash memory. The unit can also take in moving picture data through the input connector and record it as a still image in the built-in flash memory.

Before operation
Insert a recorded tape.

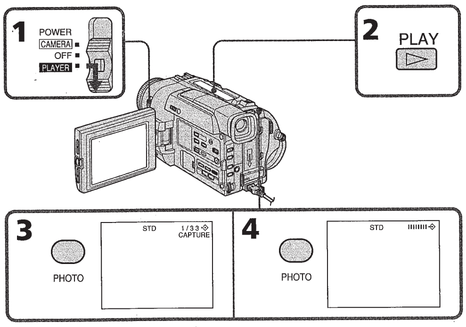
(1) Set the POWER switch to PLAYER.
(2) Press ►. The picture recorded on the tape is played back.
(3) Keep pressing PHOTO lightly until the picture from the tape freezes. The CAPTURE indicator appears in the viewfinder or on the LCD screen. Recording does not start yet.
(4) Press PHOTO deeper. The image displayed on the screen will be recorded in the built-in flash memory. Recording is complete when the bar scroll indicator disappears.

Запись изображения с записанной ленты как неподвижного изображения

– Только модель DCR-TRV510E
Ваша видеокамера может считывать данные подвижного изображения, записанные на ленте, и записывать его как неподвижное изображение во встроенную флэш-память. Данный аппарат также позволяет передавать данные подвижного изображения через входной разъем и записывать его как неподвижное изображение во встроенную флэш-память.

Перед началом работы
Вставьте записанную ленту.

(1) Установите переключатель POWER в положение PLAYER.
(2) Нажмите кнопку ►. Начнется воспроизведение изображения, записанного на ленте.
(3) Держите слегка нажатой кнопку PHOTO до тех пор, пока изображение с ленты не будет “заморожено”. В видоискателе или на экране ЖКД появится индикация CAPTURE. Запись пока не начнется.
(4) Нажмите кнопку PHOTO сильнее. Изображение, отображаемое на экране, будет записано во встроенную память. Запись считается завершенной, если исчезнет перемещающийся полосатый индикатор.



Recording an image from a recorded tape as a still image

If you press PHOTO while playing back tapes recorded in the Hi8/standard 8 system
The CAPTURE indicator appears without freezing the image.

Recording a still image from a tape immediately after turning on the power
Saving the data may take a little more time than usual. This is not a malfunction.

Запись изображения с записанной ленты как неподвижного изображения

Если Вы нажмете кнопку PHOTO во время воспроизведения лент, записанных в системе Hi8/стандартной сисетеме 8
Индикатор CAPTURE появится без замораживания изображения.

Запись неподвижного изображения с ленты сразу после включения питания
Сохранение данных может занять несколько больше времени, чем обычно. Это не является неисправностью.

Copying still images from a recorded tape – PHOTO SAVE

– DCR-TRV510E only
Using the search function, you can automatically take in only the still images from tapes and record them in the built-in flash memory in sequence.

Before operation
Insert a recorded tape and rewind the tape.

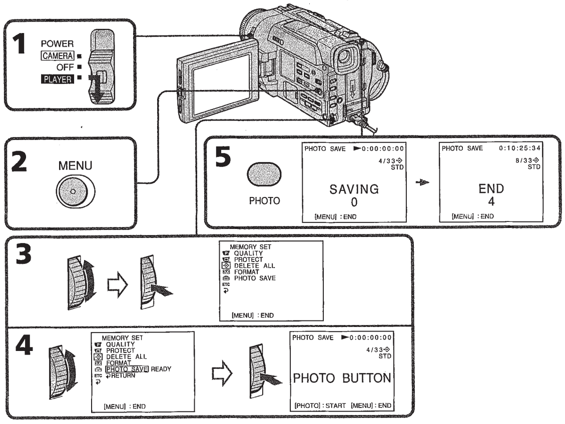
(1) Set the POWER switch to PLAYER.
(2) Press MENU to display the MENU settings.
(3) Turn the SEL/PUSH EXEC to select ⟐, then press the dial.
(4) Turn the SEL/PUSH EXEC to select PHOTO SAVE, then press the dial. The PHOTO BUTTON indicator appears on the LCD screen.
(5) Press PHOTO deeper. The still image from the tape is recorded in the built-in flash memory. The number of still images copied is displayed. The END indicator is displayed when copying is completed.

Копирование неподвижных изображений с записанных лент - PHOTO SAVE

– Только модель DCR-TRV510E
Используя функцию поиска, Вы можете автоматически выполнять фотоснимки только неподвижных изображений с лент и записывать их во встроенную флэш-память в последовательности.

Перед началом работы
Вставьте записанную ленту и перемотайте ленту.

(1) Установите переключатель POWER в положение PLAYER.
(2) Нажмите кнопку MENU, чтобы на дисплее появилась индикация MENU.
(3) Поверните диск SEL/PUSH EXEC для выбора установки ⟐, а затем нажмите диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки PHOTO SAVE, а затем нажмите диск. На экране ЖКД появится индикация PHOTO BUTTON.
(5) Нажмите кнопку PHOTO сильнее. Неподвижное изображение с ленты будет записано во встроенную флэш-память. Будет отображено количество неподвижных скопированных изображений. По завершении копирования на дисплее будет отображена индикация END.



Copying still images from a recorded tape – PHOTO SAVE

To stop copying
Press MENU.

Note
Photo save function works only for tapes recorded in the Digital8 Ð system.

To record all the images recorded on the tape
Rewind the tape all the way back and start copying.

Копирование неподвижных изображений с записанных лент – PHOTO SAVE

Для остановки копирования
Нажмите кнопку MENU.

Примечание
Функция сохранения фотоснимков работает только для лент, записанных цифровой системе Digital8 Ð.

Для записи всех изображений, записанных на ленте
Перемотайте ленту до конца назад и начните копирование.

Viewing a still picture – Memory photo playback

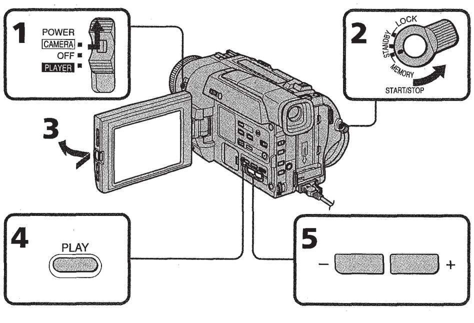
– DCR-TRV510E only
You can play back still images recorded in the built-in flash memory. You can also play back 6 images at a time by selecting the index screen.

(1) Set the POWER switch to CAMERA.
(2) Turn STANDBY to MEMORY.
(3) While pressing OPEN, open the LCD panel.
(4) Press MEMORY PLAY. The last recorded image is displayed.
(5) Press MEMORY +/– to select the desired still image. To see the previous image, press MEMORY –. To see the next image, press MEMORY +.

Просмотр неподвижного изображения - Воспроизведение фотоснимков из памяти

- Только модель DCR-TRV510E
Вы можете воспроизводить неподвижные изображения, записанные во встроенной флэш-памяти. Вы можете также воспроизводить 6 изображений путем выбора индексного экрана.

(1) Установите переключатель POWER в положение CAMERA.
(2) Поверните переключатель STANDBY в положение MEMORY.
(3) Нажав кнопку OPEN, откройте панель ЖКД.
(4) Нажмите кнопку MEMORY PLAY. Будет отбражено последнее записанное изображение.
(5) Нажмите кнопку MEMORY +/– для выбора нужного неподвижного изображения. Для того, чтобы увидеть предыдущее изображение, нажмите кнопку MEMORY –. Для того, чтобы увидеть последующее изображение, нажмите кнопку MEMORY +.



To stop memory photo playback
Press MEMORY PLAY again.

Для остановки воспроизведения фотоснимков из памяти
Нажмите кнопку MEMORY PLAY еще раз.

Viewing a still picture – Memory photo playback

To play back recorded images on a TV screen
- Connect your camcorder to the TV with the supplied A/V connecting cable before operation.
- When operating memory photo playback on a TV or the LCD screen, the image quality may appear to have deteriorated. This is not a malfunction. The image data is as good as ever.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

Screen indicators during still image playback

Просмотр неподвижного изображения – Воспроизведение фотоснимков из памяти

Для воспроизведения изображений на экране телевизора
- Перед началом работы подсоедините Вашу видеокамеру к телевизору с помощью прилагаемого соединительного кабеля аудио/видео.
- При воспроизведении фотоснимков из памяти на экране телевизора или ЖКД, качество изображения может ухудшиться. Но это не означает неисправности. Данные изображения остаются такими, как прежде.
- Перед началам работы уменьшите громкость телевизора, иначе может быть шум (завывание), слышимый через громкоговорители телевизора.

Экранные индикаторы во время воспроизведения неподвижных изображений

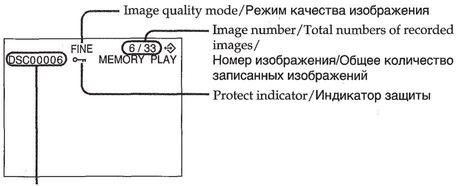


Image quality mode/Режим качества изображения

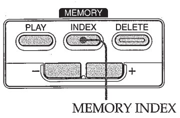
Image number/Total numbers of recorded images/
Номер изображения/Общее количество записанных изображений

Protect indicator/Индикатор защиты

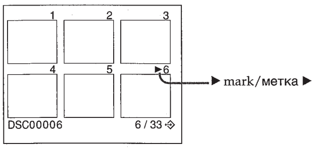
Data file name/Название файла данных

Playing back 6 recorded images at a time (index screen)

You can play back 6 recorded images at a time. This function is especially useful when searching for a particular image.



Press MEMORY INDEX.
A red ▶ mark appears above the image that is displayed before changing to the index screen mode.



- To display the following 6 images, keep pressing MEMORY +.
- To display the previous 6 images, keep pressing MEMORY –.

To return to the normal playback screen (single screen)

Press MEMORY +/– to move the ▶ mark to the image you want to display on full screen, then press MEMORY PLAY.

Воспроизведение 6 записанных изображений одновременно (индексный экран)

Вы можете воспроизводить 6 записанных изображений одновременно. Эта функция особенно полезна при поиске нужных изображений.

Нажмите кнопку MEMORY INDEX.
Над изображением появится красная метка ▶, которая отображается перед изменением в режим индексного экрана.

- Для отображения последующих 6 изображений держите нажатой кнопку MEMORY +.
- Для отображения предыдущих 6 изображений держите нажатой кнопку MEMORY –.

Для возврата к воспроизведению обычного экрана (одиночный экран)

Нажмите кнопку MEMORY +/– для перемещения метки ▶ к изображению, которое Вы хотите отображать в полный экран, а затем нажмите кнпоку MEMORY PLAY.

Note
When displaying the index screen, the number appears above each image. This indicates the order in which images are recorded in the built-in flash memory. These numbers are different from the data file names.

Files modified with personal computers
These files cannot be displayed on the index screen. Image files shot with other equipment cannot be displayed on the index screen either.

The image quality mode indicator
The indicator may show a mode different to the one in which you recorded. This is not a malfunction. The indicator shows the size of the data file.

Примечание
При отображении индексного экрана над каждым изображением появляется номер. Он указывает последовательность, в котором изображения записываются во встроенную флэш-амять. Эти номера отличаются от названий файлов данных.

Файлы, видоизмененный с помощью персонального компьютера
Эти файлы не могут отображаться на индексном экране. Файлы изображений, полученные с помощью другой аппаратуры, не могут отображаться на одном из индексных экранов.

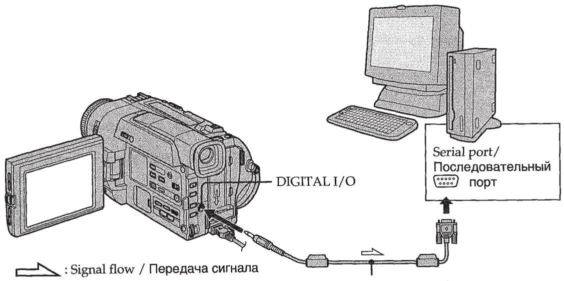
Индикатор режима качества изображения
Индикатор может показывать режим, отличающийся от того, в котором Вы выполняли запись. Это не является неисправностью. Индикатор показывает размер файла данных.

Viewing the recorded images using a personal computer

You can view the still pictures which are recorded in the built-in flash memory on the PC screen.
Set the POWER switch to PLAYER, or set the POWER switch to CAMERA and set STANDBY to MEMORY. Connect your camcorder to your PC using the PC serial cable supplied with your camcorder. The PC MODE indicator appears in the viewfinder or on the LCD screen.
For details on the connection and operation, refer to the operating instructions supplied with PictureGear 3.2Lite (supplied with your camcorder).

Просмотр записанных изображений с помощью персонального компьютера

Вы можете наблюдать неподвижные изображения, которые записаны во встроенной флэш-памяти, на экране персонального компьютера.
Установите переключатель POWER в положение PLAYER или установите переключатель POWER в положение CAMERA и установите переключатель STANDBY в положение MEMORY. Подсоедините Вашу видеокамеру к Вашему персональному компьютеру с помощью прилагаемого к Вашей видеокамере шнура последовательного подключения к персональному компьютеру. В видоискателе или на экране ЖКД будет появляться индикатор PC MODE.
Подробные сведения по подсоединению и функционированию приведены в инструкции по эксплуатации, прилагаемой к прикладной программе PictureGear 3.2Lite (прилагается к Вашей видеокамере).



PC serial cable (supplied)/
Шнур последовательного подключения к персональному компьютеру (прилагается)

To finish PC mode

Remove the PC serial cable from the DIGITAL I/O jack.

Для завершения режима персонального компьютера

Выньте шнур последовательного подключения персонального компьютера с гнезда DIGITAL I/O.

Examples of recommended OS/application software
OS
- Windows95 or 98
- WindowsNT4.0

Application
- Microsoft Internet Explorer, etc.

Notes
- When you view images recorded with the camcorder on a personal computer, the display may show lines on the edge of the screen, depending on the current state of video input signals. This is not a malfunction.
- You cannot access your PC:
  - while the tape is being played back.
  - during the slide show.
  - while copying still images.
  - while the cassette compartment is opened.

Примеры рекомендуемых операционных систем/прикладных программ
Операционная система
- Windows95 или 98
- WIndowsNT4.0

Прикладная программа
- Microsoft Internet Explorer и т.п.

Примечания
- При просмотре на персональном компьютере изображений, записанных с помощью видеокамеры, на дисплее могут быть видны полосы по краям экрана, в зависимости от текущего состояния входных видеосигналов. Это не является неисправностью.
- У Вас не будет доступа к персональному компьютеру:
  - во время воспроизведения ленты.
  - во время демонстрации слайдов.
  - во время копирования неподвижных изображений.
  - в то время, когда открыт отсек кассеты.

Playing back images in a continuous loop – SLIDE SHOW

– DCR-TRV510E only

You can automatically play back images in sequence. This function is useful especially when checking the recorded images or during a presentation.

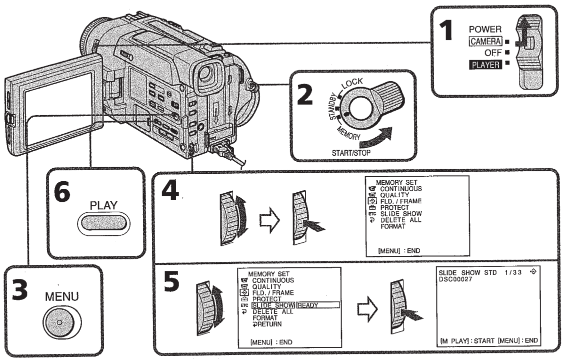
(1) Set the POWER switch to CAMERA.
(2) Turn STANDBY to MEMORY.
(3) Press MENU to display the MENU settings.
(4) Turn the SEL/PUSH EXEC dial to select ⟐ , then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select SLIDE SHOW, then press the dial.
(6) Press MEMORY PLAY. The unit plays back the images recorded in the built-in flash memory in sequence. When all the images have been played back, the display shows the first image again and the slide show ends.

Воспроизведение изображений в непрерывной последовательности по замкнутому циклу – SLIDE SHOW

– Только модель DCR-TRV510E

Вы можете автоматически воспроизводить изображения в непрерывной последовательности.

(1) Установите переключатель POWER в положение CAMERA.
(2) Поверните переключатель STANDBY в положение MEMORY.
(3) Нажмите кнопку MENU для отображения установок MENU.
(4) Поверните диск SEL/PUSH EXEC для выбора установки ⟐ , а затем нажмите диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки SLIDE SHOW, а затем нажмите диск.
(6) Нажмите кнопку MEMORY PLAY. Аппарат начнет воспроизводить изображения, записанные во встроенной флэш-памяти, в непрерывной последовательности. Когда все изображения будут воспроизведены, на дисплее снова появится первое изображение, и демонстрация слайдов закончится.


1
POWER
CAMERA
OFF
PLAYER
2
LOCK
STANDBY
MEMORY
START/STOP
6
PLAY
3
MENU
4
MEMORY SET
CONTINUOUS
QUALITY
FLD. / FRAME
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
[MENU] : END
5
MEMORY SET
CONTINUOUS
QUALITY
FLD. / FRAME
PROTECT
SLIDE SHOW READY
DELETE ALL
FORMAT
RETURN
[MENU] : END
SLIDE SHOW STD 1/33
DSC00027
[M PLAY] : START [MENU] : END

Playing back images in a continuous loop – SLIDE SHOW

To stop the slide show

Press MENU.

To pause during a slide show

Press MEMORY PLAY.

To start the slide show from a particular image

Select the desired image using MEMORY +/– buttons before step 3.

To view the recorded images on TV

Connect your camcorder to a TV with the supplied A/V connecting cable before operation.

Note on the slide show

You cannot make a copy of the slide show on a tape.

Воспроизведение изображений в непрерывной последовательности по замкнутому циклу – SLIDE SHOW

Для остановки демонстрации слайдов

Нажмите кнопку MENU.

Для паузы во время демонстрации слайдов

Нажмите кнопку MEMORY PLAY.

Для начала демонстрации слайдов с определеного изображения

Выберите нужное изображение с помощью кнопок MEMORY +/– перед пунктом 3.

Для просмотра записанных изображений на экране телевизора

Подсоедините Вашу видеокамеру к телевизору с помощью прилагаемого соединительного кабеля аудио/видео.

Примечание по демонстрации слайдов

Вы не може выполнять копии демонстрационных слайдов на ленте.

Preventing accidental erasure – PROTECT

– DCR-TRV510E only

To prevent accidental erasure of important images, you can protect selected images.

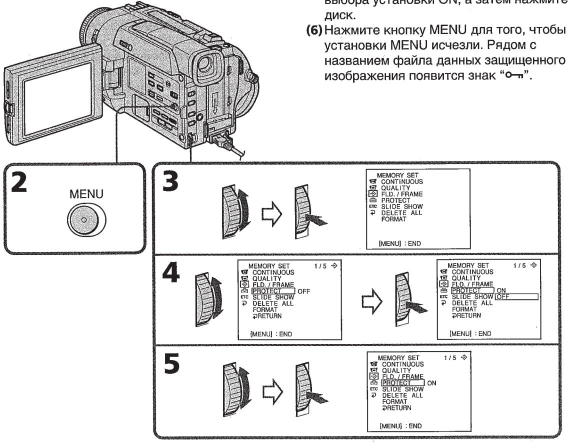
(1) Display the image you want to protect.
(2) Press MENU to display the MENU settings.
(3) Turn the SEL/PUSH EXEC dial to select ⟐ , then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select PROTECT, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(6) Press MENU to make the MENU settings disappear. The "O‑╥" mark is displayed beside the data file name of the protected image.

Предотвращение случайного стирания – PROTECT

– Только модель DCR-TRV510E

Для предотвращения случайного стирания важных изображений Вы можете защитить выбранные изображения.

(1) Отобразите на дисплее изображение, которое Вы хотите защитить.
(2) Нажмите кнопку MENU для отображения установок MENU.
(3) Поверните диск SEL/PUSH EXEC для выбора установки ⟐ , а затем нажмите диск.
(4) Поверните диск SEL/PUSH EXEC для выбора установки PROTECT, а затем нажмите диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки ON, а затем нажмите диск.
(6) Нажмите кнопку MENU для того, чтобы установки MENU исчезли. Рядом с названием файла данных защищенного изображения появится знак "O‑╥".


2
MENU
3
MEMORY SET
CONTINUOUS
QUALITY
FLD. / FRAME
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
[MENU] : END
4
MEMORY SET 1/5
CONTINUOUS
QUALITY
FLD. / FRAME
PROTECT OFF
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU] : END
MEMORY SET 1/5
CONTINUOUS
QUALITY
FLD. / FRAME
PROTECT ON
SLIDE SHOW OFF
DELETE ALL
FORMAT
RETURN
[MENU] : END
5
MEMORY SET 1/5
CONTINUOUS
QUALITY
FLD. / FRAME
PROTECT ON
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU] : END

To cancel image protection

Select OFF in step 5, then press the SEL/PUSH EXEC dial.

Note

Formatting erases all information in the built-in flash memory, including the protected image data. Check the contents of the flash memory before formatting.

Для отмены защиты изображения

Выберите установку OFF в пункте 5, а затем нажмите диск SEL/PUSH EXEC.

Примечание

Форматирование стирает всю информацию во встроеннай флэш-памяти, включая данные защищенных изображений. Перед форматированием проверьте содержание флэш-памяти.

Deleting images – DELETE

– DCR-TRV510E only

Deleting selected images

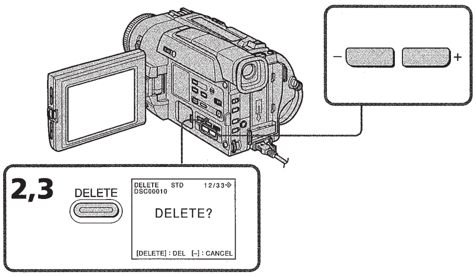
(1) Display the image you want to delete.
(2) Press MEMORY DELETE. "DELETE?" appears on the LCD screen.
(3) Press MEMORY DELETE again. The selected image is deleted.

Удаление изображений – DELETE

– Только модель DCR-TRV510E

Удаление выбранных изображений

(1) Отобразите изображение, которое Вы хотите удалить.
(2) Нажмите кнопку MEMORY DELETE. На экране ЖКД появится индикация "DELETE?"
(3) Нажмите кнопку MEMORY DELETE еще раз. Выбранное изображение будет удалено.


–
+
2,3
DELETE
DELETE STD 12/33
DSC00010
DELETE?
[DELETE] : DEL [–] : CANCEL

To cancel deleting an image

Press MEMORY – in step 3.

To delete an image displayed on the index screen

Press MEMORY +/– to move the ▶ indicator to the desired image and follow steps 2 and 3.

Notes

- To delete a protected image, first cancel image protection.
- Once you delete an image, you cannot restore it. Check the images to delete carefully before deleting them.

Для отмены удаления изображения

Нажмите кнопку MEMORY – в пункте 3.

Для удаления изображения, отображаемого на индексном экране

Нажмите кнопку MEMORY +/– для перемещения индикатора ▶ к нужному изображению и выполните действия пунктов 2 и 3.

Примечания

- Для удаления защищенного изображения сначала отмените защиту изображения.
- После удаления изображения Вы не сможете снова восстановить его. Прежде, чем удалить изображения, их следует тщательно проверить.

Erasing all the images

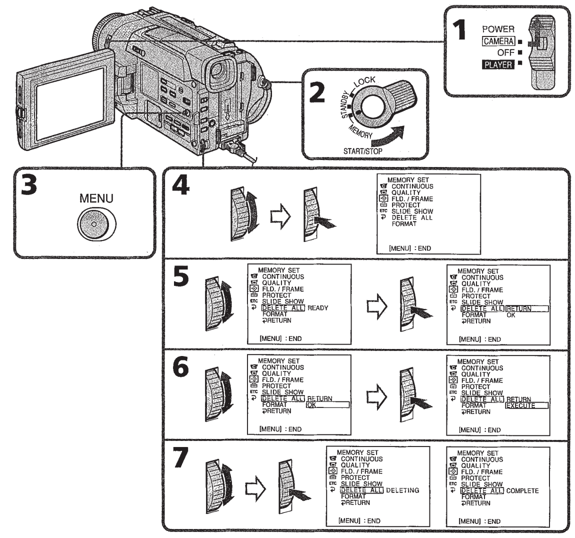
You can delete all the unprotected images in the built-in flasn memory.

(1) Set the POWER switch to CAMERA.
(2) Set the STANDBY to MEMORY.
(3) Press MENU to display the MENU settings.
(4) Turn the SEL/PUSH EXEC to select ⟐, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select DELETE ALL, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select OK, then press the dial. The OK indicator changes to EXECUTE.
(7) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial. The DELETING indicator appears on the LCD screen. When all the unprotected images are deleted, the COMPLETE indicator is displayed.

Стирание всех изображений

Вы можете удалить все незащищенные изображения из встроенной флэш-памяти.

(1) Установите переключатель POWER в положение CAMERA.
(2) Поверните переключатель STANDBY в положение MEMORY.
(3) Нажмите кнопку MENU для отображения установок MENU.
(4) Поверните диск SEL/PUSH EXEC для выбора установки ⟐, а затем нажмите диск.
(5) Поверните диск SEL/PUSH EXEC для выбора установки DELETE ALL, а затем нажмите диск.
(6) Нажмите диск SEL/PUSH EXEC для выбора установки OK, а затем нажмите диск. Индикатор OK изменится на индикатор EXECUTE.
(7) Поверните диск SEL/PUSH EXEC для выбора установки EXECUTE, а затем нажмите диск. На экране ЖКД появится индикатор DELETING. Когда все незащищенные выражения будут удалены, на экране появится индикатор COMPLETE.



To cancel deleting all the images in the built-in flash memory
Select ⮐ RETURN in step 4, then press the control dial.

While the DELETING indicator appears
Do not turn the POWER switch or press any buttons.

Для отмены удаления всех изображений из встроенной флэш-памяти
Выберите команду ⮐ RETURN в пункте 4, а затем нажмите диск управления.

Во время отображения индикатора DELETING
Не поворачивайте переключатель POWER и не нажимайте какие-либо кнопки.

Changing the MENU settings

To change the mode settings in the MENU settings, select the menu items with the SEL/PUSH EXEC dial. The factory settings can be partially changed. First, select the icon, then the menu item and then the mode.

(1) In the standby, MEMORY (DCR-TRV510E only) or PLAYER mode, press MENU.
(2) Turn the SEL/PUSH EXEC dial to select the desired icon, then press the dial to set.
(3) Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial to set.
(4) Turn the SEL/PUSH EXEC dial to select the desired mode, and press the dial to set.
(5) If you want to change other items, select ⮐ RETURN and press the dial, then repeat steps from 2 to 4.

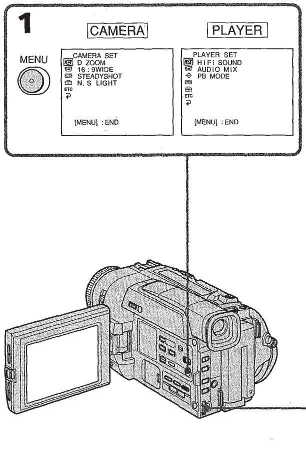
For details, see "Selecting the mode setting of each item" (p. 101).

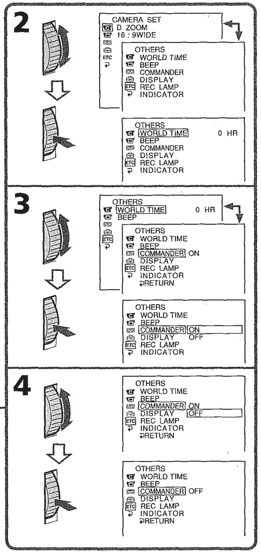
Изменение установок MENU

Для изменения установок режима в установках MENU выберите пункты меню с помощью диска SEL/PUSH EXEC. Заводская установка может быть частично изменена. Сначала выберите пиктограмму, затем пункт меню, а затем режим.

(1) В режиме ожидания, MEMORY (только модель DCR-TRV510E) или режиме PLAYER нажмите кнопку MENU.
(2) Поверните диск SEL/PUSH EXEC для выбора нужной пиктограммы, а затем нажмите диск для установки.
(3) Поверните диск SEL/PUSH EXEC для выбора нужной пиктограммы, а затем нажмите диск для установки.
(4) Поверните диск SEL/PUSH EXEC для выбора нужной пиктограммы, а затем нажмите диск для установки.
(5) Если Вы хотите изменить другие пункты, выберите команду ⮐ RETURN, а затем нажмите диск, после чего повторите действия пунктов со 2 по 4.

Подробные сведения приведены в разделе "Выбор установок режима по каждому пункту" (стр. 106).





To make the MENU display disappear
Press MENU.

Note
When you let the subject monitor the shot (Mirror mode), the menu display does not appear.

Menu items are displayed as the following seven icons:

CAMERA SET
PLAYER SET
LCD/VF SET
MEMORY SET (DCR-TRV510E only)
TAPE SET
SETUP MENU
OTHERS

Для того, чтобы исчезла индикация MENU
Нажмите кнопку MENU.

Примечание
Если Вы дадите возможность позирующему человеку контролировать съемку (зеркальный режим), индикация меню не будет появляться на дисплее.

Пункты меню отображаются в виде шести, приведенных ниже, пиктограмм:

CAMERA SET
PLAYER SET
LCD/VF SET
MEMORY SET (только модель DCR-TRV510E)
TAPE SET
SETUP MENU
OTHERS

English

Selecting the mode setting of each item ● is the factory setting.

Menu items differ according to whether the POWER switch is set to PLAYER or CAMERA.

Icon/item	Mode	Meaning	POWER switch
D ZOOM	● ON	To activate digital zoom. More than 20× to 80× zoom is performed digitally (p. 27)	CAMERA
	OFF	To prevent the deterioration of the picture quality	
16:9WIDE	● OFF	—	CAMERA*
	ON	To record a 16:9 wide picture (p. 47)	
STEADYSHOT	● ON	To compensate for camera-shake	CAMERA
	OFF	To cancel the SteadyShot function. Natural pictures are produced when shooting a stationary object with a tripod.	
N.S. LIGHT	● ON	To use the NightShot Light function (p. 31)	CAMERA
	OFF	To cancel the NightShot Light function	

* This item is displayed only when the STANDBY switch is set to STANDBY.

Notes on the SteadyShot function
- The SteadyShot function will not correct excessive camera-shake.
- Attachment of a conversion lens (not supplied) may influence the SteadyShot function.

Icon/item	Mode	Meaning	POWER switch
HiFi SOUND	● STEREO	To play back a stereo tape or dual sound track tape with main and sub sound	PLAYER
	1	To play back dual sound track tape with main sound	
	2	To play back a dual sound track tape with sub sound	
AUDIO MIX		To adjust the balance between the stereo 1 and stereo 2 	PLAYER
NTSC PB	● ON PAL TV	To playback a tape recorded on your camcorder on a PAL system TV	PLAYER
	NTSC 4.43	To playback a tape recorder in the NTSC colour system on a TV with the NTSC 4.43 mode	
PB MODE	● AUTO	To automatically select the system (Hi8/standard 8 or Digital8) that was used to record on the tape, and play back the tape	PLAYER
	Hi8/8	To play back a tape that was recorded in the Hi8/standard 8 system when your camcorder does not automatically distinguish the recording system	
LCD B. L.	● BRT NORMAL	To set the brightness on the LCD screen normal	PLAYER CAMERA
	BRIGHT	To brighten the LCD screen	
LCD COLOUR		To adjust the colour on the LCD screen, turn and press the SEL/PUSH EXEC dial To lighten To darken	PLAYER CAMERA
VF B. L.	● BRT NORMAL	To set the brightness in the viewfinder normal	PLAYER CAMERA
	BRIGHT	To brighten the viewfinder	

Notes on AUDIO MIX

- You can adjust the balance only for tapes recorded in the Digital8 system.
- When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance.

Note on NTSC PB

When you play back a tape on a Multi System TV, select the best mode while viewing the picture on the TV.

Note on PB MODE

The mode will return to the factory setting when:
- you remove the battery pack or power source.
- you turn the POWER switch.

Notes on LCD B. L. and VF B. L.

- When you select "BRIGHT", battery life is reduced by about 10 percent during recording.
- When you use power sources other than the battery pack, "BRIGHT" is automatically selected.

Icon/item	Mode	Meaning	POWER switch
CONTINUOUS*	● OFF	Not to store continuously	CAMERA**
	ON	To record 3 or 4 pictures continuously	
	MULTI SCRN	To record 9 pictures continuously	
QUALITY*	● STANDARD	To record still pictures in the standard image quality mode	PLAYER CAMERA**
	FINE	To store still pictures in the fine image quality mode	
FLD./FRAME*	● FIELD	To record moving subjects	CAMERA**
	FRAME	To record stopping subjects in high quality	
PROTECT*	● OFF	Not to protect still pictures	PLAYER CAMERA**
	ON	To protect selected still pictures against accidental erasure. (p. 96)	
SLIDE SHOW*		To play back images in a continuous loop. (p. 94)	PLAYER CAMERA**
DELETE ALL*		To delete all the images (p. 97)	PLAYER CAMERA**
FORMAT*		To format the built-in flash memory	PLAYER CAMERA**
PHOTO SAVE*		To duplicate still pictures (p. 86)	PLAYER

* DCR-TRV510E only
** These items are displayed only when the STANDBY switch is set to MEMORY.

Notes on FORMAT

Format (initialize) the builf-in flash memory when the warning indicator flashes fast.
To format (initialize) the built-in flash memory, carry out the following operation.

(1) Set the POWER switch to CAMERA or PLAYER. When you set the POWER switch to CAMERA, turn STANDBY to MEMORY.
(2) Press MENU to display the MENU settings.
(3) Turn the SEL/PUSH EXEC dial to select , then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select FORMAT, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select OK, then press the dial.

To cancel formatting, select RETURN, then press the dial.

- Formatting erases all information in the built-in flash memory, inclusing the protected image data. Check the contents of the flash memory befor formatting.
- Be sure that the battery pack is fully charged when formatting the built-in flash memory. Formatting takes about three seconds.
- Do not turn the POWER switch or press any button while the display shows "FORMATTING".

Icon/item	Mode	Meaning	POWER switch
AUDIO MODE	● 12BIT	To record or play back in the 12-bit mode (two stereo sounds)	PLAYER* CAMERA**
	16BIT	To record or play back in the 16-bit mode (the one stereo sound with high quality)	
REMAIN	● AUTO	To display the remaining tape bar: • for about 8 seconds after your camcorder is turned on and calculates the remaining amount of tape • for about 8 seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape • for about 8 seconds after ► is pressed in PLAYER mode • for about 8 seconds after DISPLAY is pressed to display the screen indicators • for the period of tape rewinding, forwarding or picture search in the PLAYER mode	PLAYER CAMERA**
	ON	To always display the remaining tape indicator	
DATA CODE	● DATE/CAM	To display date, time and recording data during playback	PLAYER
	DATE	To display date and time during playback	
CLOCK SET		To reset the date or time (p. 111)	CAMERA
LTR SIZE	● NORMAL	To display selected menu items in normal size	PLAYER CAMERA
	2×	To display selected menu items at twice the normal size	
DEMO MODE	● ON	To make the demonstration appear	CAMERA
	OFF	To cancel the demonstration mode	

* **To dub a tape to another VCR**
You cannot select AUDIO MODE for tapes recorded in the Digital8 system. You, however, can select AUDIO MODE when you dub tapes recorded in Hi8/standard 8 system to another VCR using the i.LINK cable.
** These items are displayed only when the STANDBY switch is set to STANDBY.

Note on AUDIO MODE

When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance in AUDIO MIX.

Notes on DEMO MODE

- You cannot select DEMO MODE when a cassette is inserted in your camcorder.
- DEMO MODE is set to STBY (Standby) at the factory and the demonstration starts about 10 minutes after you have set the POWER switch to CAMERA without a cassette inserted.
  Note that you cannot select STBY of DEMO MODE in the MENU settings.
- When NIGHTSHOT is set to ON, the NIGHTSHOT indicator appears in the viewfinder or on the LCD screen and you cannot select DEMO MODE in the MENU settings.

Icon/item	Mode	Meaning	POWER switch
WORLD TIME		To set the clock to the local time. Turn the SEL/PUSH EXEC dial to set a time difference. The clock changes by the time difference you set here. If you set the time difference to 0, the clock returns to the originally set time.	CAMERA
BEEP	● MELODY	To output the melody when you start/stop recording or when an unusual condition occurs on your camcorder	PLAYER CAMERA
	NORMAL	To output the beep instead of the melody	
	OFF	To cancel the melody and beep sound	
COMMANDER	● ON	To activate the Remote Commander supplied with your camcorder	PLAYER CAMERA
	OFF	To deactivate the Remote Commander to avoid remote control misoperation caused by other VCR's remote control	
DISPLAY	● LCD	To show the display on the LCD screen and viewfinder	PLAYER CAMERA
	V-OUT/LCD	To show the display on the TV screen, LCD screen and viewfinder	
REC LAMP	● ON	To light up the camera recording lamp at the front of your camcorder	CAMERA
	OFF	To turn the camera recording lamp off so that the subject is not aware of the recording	
INDICATOR	● BL OFF	To turn off the backlight on display window	PLAYER CAMERA
	BL ON	To turn on the backlight	

In more than 5 minutes after removing the power source

The "COMMANDER" and "HiFi SOUND" items are returned to their factory settings.
The other menu items are held in memory even when the battery is removed, as long as the lithium battery is installed.

Note

If you press DISPLAY with "DISPLAY" set to "V-OUT/LCD" in the MENU settings, the picture from a TV or VCR will not appear on the LCD screen even when your camcorder is connected to outputs on the TV or VCR.

Notes on INDICATOR

- When you select "BL ON", battery life is reduced by about 10 percent during recording.
- When you use power sources other than the battery pack, "BL ON" is automatically selected.

Resetting the date and time

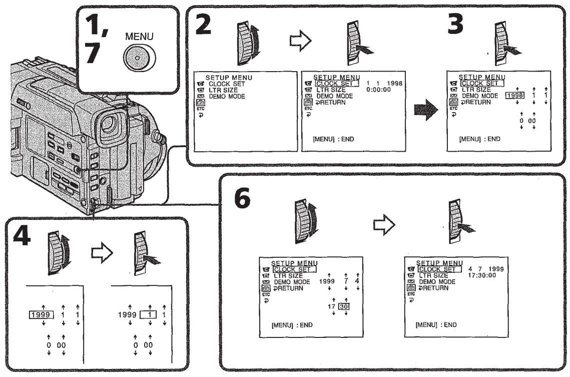
The clock is set at the factory to London time for United Kingdom to Paris time for the other European countries.
The date and time are held in memory by the lithium battery. If you replace the lithium battery with the battery pack or other power source connected, you need not reset the date and time. You must reset the date and time when the lithium battery becomes dead with no power source installed.
First, set the year, then the month, the day, the hour and then the minute.

(1) While the camcorder is in the standby mode, press MENU to display the MENU settings.
(2) Turn the SEL/PUSH EXEC dial to select ⊟, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select CLOCK SET, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to adjust the desired year, then press the dial.
(5) Set the month, day and hour by turning the SEL/PUSH EXEC dial and pressing the dial.
(6) Set the minute by turning the SEL/PUSH EXEC dial and pressing the dial by the time signal. The clock starts to move.
(7) Press MENU to make the MENU settings disappear. The time indicator appears.

Переустановка даты и времени

Часы установлены на предприятии-изготовителе на время Лондона для моделей Соединенного Королевства и на время Парижа для других европейских моделей.
Дата и время сохраняются в памяти с помощью литиевой батарейки. Если Вы от литиевой батарейки переключитесь на батарейный блок или другой подсоединенный источник питания, Вам нужно будет переустановить дату и время. Вам нужно также переустановить дату и время, когда литиевая батарейка разрядится и в это время не будет вставлен источник питания.
Сначала установите год, затем месяц, день, час и минуту.

(1) В режиме ожидания видеокамеры нажмите кнопку MENU для отображения установок MENU.
(2) Поверните диск SEL/PUSH EXEC для выбора индикации ⊟, а затем нажмите диск.
(3) Поверните диск SEL/PUSH EXEC для выбора команды CLOCK SET, а затем нажмите диск.
(4) Поверните диск SEL/PUSH EXEC для выбора нужного года, а затем нажмите диск.
(5) Установите месяц, день и час путем вращения диска SEL/PUSH EXEC и нажимания диска.
(6) Установите минуту путем вращения диска SEL/PUSH EXEC и нажимания диска в момент передачи сигнала точного времени. Часы начнут функционировать.
(7) Нажмите кнопку MENU для того, чтобы исчезли установки MENU. Появится индикатор времени.



Resetting the date and time

The year changes as follows:

1998 ↔ 1999 ← · · · · → 2029

Note on the time indicator
The internal clock of your camcorder operates on a 24-hour cycle.

Переустановка даты и времени

Год изменяется следующим образом:

1998 ↔ 1999 ← · · · · → 2029

Примечание по индикатору времени
Встроенные часы Вашей видеокамеры работают в 24-часовом режиме.

Digital8 Ð system, recording and playback

What is the "Digital8 Ð system"?

This video system has been developed to enable digital recording to Hi8 video cassettes **Hi8**.

Usable cassette tapes

We recommend using Hi8 video cassettes **Hi8**. The recording time when you use your Digital8 Ð system camcorder on Hi8 **Hi8**/standard 8 **8** tape is 2/3 the recording time when using the conventional Hi8 **Hi8**/standard 8 **8** system camcorder. (90 minutes of recording time becomes 60 minutes.)
If you use standard 8 **8** tape, be sure to playback the tape on this camcorder. Mosaic pattern noise may appear when you playback standard 8 **8** tape on other VCRs.

Note
Tapes recorded in the Digital8 Ð system cannot be played back on Hi8 **Hi8**/standard 8 **8** (analog) system machine.

Playback system

The Digital8 Ð system or Hi8 **Hi8**/standard 8 **8** system is automatically detected before the tape is played back.*

* During playback of tapes recorded in the Hi8 **Hi8**/standard 8 **8** system, digital signals are output as the image signals from the i DV OUT jack.

Display during automatic detection of system
The Digital8 Ð system or Hi8 **Hi8**/standard 8 **8** system is automatically detected, and the playback system is automatically switched to. During switching of systems, the screen turns blue, and the following displays appear. A hissing noise also sometimes can be heard.

Ð → **Hi8**/**8**: During switching from Digital8 Ð to Hi8 **Hi8**/standard 8 **8**
Hi8/**8** → Ð: During switching from Hi8 **Hi8**/standard 8 **8** to Digital8 Ð

Цифровая система Digital8 Ð, запись и воспроизведение

Что такое "система Digital8 Ð"?

Эта видеосистема была разработана для обеспечения цифровой записи на видеокассеты Hi8 **Hi8**.

Используемые кассеты

Рекомендуется использовать видеокассеты Hi8 **Hi8**. Время записи при использовании Вашей видеокамеры системы Digital8 Ð на ленте Hi8 **Hi8**/стандартной ленте 8 **8** составляет 2/3 времени записи в сравнении с обычной видеокамерой Hi8 **Hi8**/видеокамерой стандартной системы 8 **8** (90 минут времени записи становятся равными 60 минутам).
Если Вы используете стандартную ленту 8 **8**, то ее следует воспроизводить на этой же видеокамере. В случае воспроизведения стандартной ленты 8 **8** на других КВМ могут появиться помехи мозаичного типа.

Примечание
Ленты, записанные в цифровой системе Digital8 Ð, не могут быть воспроизведены на аппаратуре системы Hi8 **Hi8**/стандартной системы 8 **8** (аналоговой).

Система воспроизведения

Система Digital8 Ð или Hi8 **Hi8**/стандартная система 8 **8** автоматически детектируется перед воспроизведением ленты.*

* Во время воспроизведения лент, записанных в системе Hi8 **Hi8**/стандартной системе 8 **8**, цифровые сигналы выводятся в качестве сигналов изображения через гнездо i DV OUT.

Индикация во время автоматического детектирования системы
Система Digital8 Ð или Hi8 **Hi8**/стандартная система 8 **8** автоматически детектируется, а система воспроизведения автоматически включается. Во время выключения системы экран становится голубым и появляются следующие индикации. Может быть также слышен свистящий шум.

Ð → **Hi8**/**8**: Во время переключения с системы Digital8 Ð на систему Hi8 **Hi8**/стандартную систему 8 **8**
Hi8/**8** → Ð: Во время переключения с системы Hi8 **Hi8**/стандартную систему 8 **8** на систему Digital8 Ð

Playback and replay in the Digital8 Ð system

When you play back

Playing back an NTSC-recorded tape
You can play back tapes recorded in the NTSC video system, if the tape is recorded in the Digital8 Ð system. If the tape is recorded in the AFM HiFi system, the AFM HiFi sound is reproduced. However, note that the following will occur during playback of an NTSC-recorded tape.

- When playing back a tape on a TV, you may not get the original colour depending on the TV. When you play back on a Multi System TV, set NTSC PB to the desired mode in the menu setting.
- During playback, a black band appears on the lower part of the viewfinder.
- If a tape has portions recorded in PAL and NTSC video systems, the tape counter reading is not correct. This discrepancy is due to the difference between the counting cycle of the two video systems.
- You cannot edit the NTSC-recorded tape onto another VCR.

Цифровая система Digital8 Ð, запись и воспроизведение

При воспроизведении

Воспроизведение лент, записанных в системе NTSC
Вы можете воспроизводить ленты, записанные в системе NTSC, если лента записана в цифровой системе Digital8 Ð. Если лента записана в системе AFM Hi-Fi, то звук будет воспроизводиться в системе AFM Hi-Fi. Однако, имейте в виду, что во время воспроизведения лент, записанных в системе NTSC, будет иметь место следующее.

- При воспроизведении ленты на экране телевизора Вы можете не получить первоначальные цвета в зависимости от типа телевизора. При воспроизведении на мультисистемном телевизоре установите переключатель NTSC PB на нужный режим в установках меню.
- Во время воспроизведения в нижней части видоискателя будет появляться черная полоса.
- Если на ленте имеются участки, записанные в видеосистемах PAL и NTSC, то функционирование счетчика ленты будет неправильным. Это расхождение объясняется разницей между счетными циклами двух видеосистем.
- Вы не можете выполнять монтаж ленты, записанной в системе в системе NTSC, на другой КВМ.

Playback and replay in the Digital8 Ð system

When you playback a dual sound track tape

When you use tapes recorded in the Digital8 Ð system

When you play back a Digital8 Ð system tape which is dubbed from a dual sound track tape recorded in the DV system, set "HiFi SOUND" to the desired mode in the MENU settings (p. 100).

Sound from speaker

HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Lch	Main sound
2	Rch	Sub sound

When you use tapes recorded in the Hi8/standard 8 system

When you play back a dual sound track tape recorded in an AFM HiFi stereo system, set "HiFi SOUND" to the desired mode in the MENU settings (p. 100).

Sound from speaker

HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Monaural	Main sound
2	Unnatural Sound	Sub sound

You cannot record dual sound programmes on your camcorder.

Цифровая система Digital8 Ð, запись и воспроизведение

При воспроизведении ленты с двойной звуковой дорожкой

При использовании лент, записанных в цифровой системе Digital8 Ð

При воспроизведении ленты в цифровой системе Digital8 Ð, на которую выполнена перезапись ленты с двойной звуковой дорожкой, записанной в цифровой видеосистеме DV, установите команду "HiFi SOUND" в нужный режим в установках MENU (стр. 100).

Звук от динамика

Режим звучания HiFi	Воспроизведение стереофонической ленты	Воспроизведение ленты с двойной звуковой дорожкой
STEREO	Стерео	Основной звук и вспомогательный звук
1	Левый канал	Основной звук
2	Правый канал звук	Вспомогательный звук

При использовании лент, записанных в системе Hi8/стандартной системе 8

При воспроизведении ленты с двойной звуковой дорожкой, записанной в стереофонической системе AFM HiFi, установите команду "HiFi SOUND" в нужный режим в установках MENU (стр. 100).

Звук от динамика

Режим звучания HiFi	Воспроизведение стереофонической ленты	Воспроизведение ленты с двойной звуковой дорожкой
STEREO	Стерео	Основной звук и вспомогательный звук
1	Монофонический звук	Основной звук
2	Необычный звук	Вспомогательный звук

Вы не можете записывать программы с двойным звучанием на Вашей видеокамере.

Changing the lithium battery in your camcorder

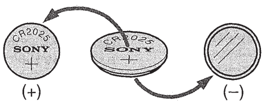
When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time and other items in the MENU settings hold in memory by the lithium battery.

Insert the battery with the positive (+) side facing out. When the battery becomes weak or dead, the ⚡ indicator flashes in the viewfinder for about 5 seconds when you set the POWER switch to CAMERA. In this case, **replace the battery with a Sony CR2025 lithium battery. Use of any other battery may present a risk of fire or explosion.** Discard used batteries according to the manufacturer's instructions.

Замена литиевой батарейки в Вашей видеокамере

При замене литиевой батарейки батарейный блок или другой источник питания должен быть прикреплен к видеокамере. В противном случае Вам понадобится переустанавливать дату, время и другие пункты в установках MENU, хранимых в памяти видеокамеры с помощью литиевой батарейки.

Вставьте батарейку так, чтобы положительный (+) полюс был обращен наружу. Если батарейка станет слабой или разрядится, индикатор ⚡ будет мигать в видоискателе около 5 секунд, если переключатель POWER установлен в положение CAMERA. В этом случае, **замените батарейку на литиевую батарейку Sony CR2025. Использование какой-либо другой батарейки создает риск воспламенения или взрыва.** Ликвидируйте использованные батарейки в соответствии с инструкциями предприятия-изготовителя.



WARNING

The battery may explode if mistreated. Do not recharge, disassemble, nor dispose of it in fire.

Lithium battery

- Keep the lithium battery out of the reach of children.
- Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to ensure good contact.

Lithium battery installed at the factory

This battery may not last 1 year.

ВНИМАНИЕ

Если с батарейкой неправильно обращаться, она может взорваться. Не перезаряжайте, не разбирайте и не бросайте в огонь батарейку.

Литиевая батарейка

- Храните литиевую батарейку в месте, не доступном для детей.
- В случае, если кто-либо случайно проглотит батарейку, следует немедленно обратиться к врачу.
- Протрите батарейку сухой тканью для обеспечения хорошего контакта.

Литиевая батарейка, установленная на заводе

Этой батарейки может не хватить на 1 год.

Changing the lithium battery in your camcorder

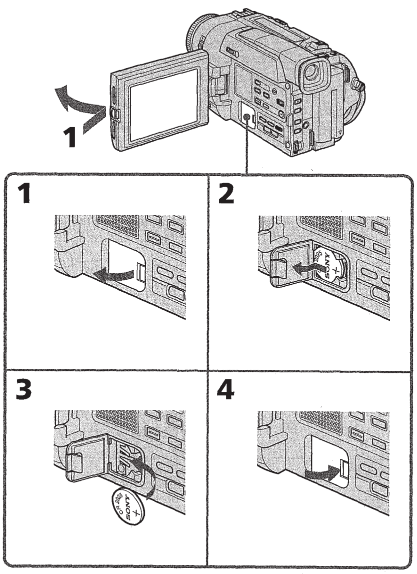
Changing the lithium battery

(1) Open the LCD panel and open the lid of the lithium battery compartment.
(2) Push the lithium battery down once and pull it out from the holder.
(3) Install a Sony CR2025 lithium battery with the positive (+) side facing out.
(4) Close the lid.

Замена литиевой батарейки в Вашей видеокамере

Замена литиевой батарейки

(1) Откройте панель ЖКД и откройте крышку отсека для литиевой батарейки.
(2) Нажмите литиевую батарейку вниз один раз и выньте ее из держателя.
(3) Установите литиевую батарейку Sony CR2025 так, чтобы положительный (+) полюс был обращен наружу.
(4) Закройте крышку.



English

Troubleshooting

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem persists, disconnect the power source and contact your Sony dealer or local authorized Sony service facility. If "C:□□:□□" appears on the LCD screen or in the viewfinder, the self-diagnosis display function has worked. See page 122.

In the recording mode

Symptom	Cause and/or Corrective Actions
START/STOP does not operate.	• The POWER switch is set to PLAYER. → Set it to CAMERA. (p. 22) • STANDBY is set to LOCK. → Turn STANDBY to STANDBY. (p. 22) • The tape has run out. → Rewind the tape or insert a new one. (p. 20, 35) • The write-protect tab is set to expose the red mark. → Use a new tape or slide the tab. (p. 21) • The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 131)
Recording stops in a few seconds.	• START/STOP MODE is set to 5SEC or ⊥. → Set it to ⊻. (p. 28)
The power goes off.	• While being operated in the CAMERA mode, your camcorder has been in the standby mode for more than 3 minutes. → Turn STANDBY down once and then up again. (p. 22)
Your camcorder turns on/off when using the accessory that is attached to the intelligent accessory shoe.	• Your camcorder is working with the AC power adaptor. → Use the battery pack.
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. → Adjust the viewfinder lens. (p. 26)
The SteadyShot function does not work.	• STEADYSHOT is set to OFF in the MENU settings. → Set it to ON. (p. 100)
The autofocusing function does not work.	• FOCUS is set to MANUAL. → Set it to AUTO. (p. 60) • Shooting conditions are not suitable for autofocus. → Set FOCUS to MANUAL to focus manually. (p. 60)
The fader function does not work.	• START/STOP MODE is set to 5SEC or ⊥. → Set it to ⊻. (p. 28) • The digital effect function is working. → Cancel it. (p. 54)
The ⊗ indicator flashes in the viewfinder.	• The video heads may be dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (not supplied). (p. 132)
The picture does not appear in the viewfinder.	• The LCD panel is open. → Close the LCD panel. (p. 23)

Symptom	Cause and/or Corrective Actions
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background.	• The contrast between the subject and background is too high. Your camcorder is not a malfunction.
A vertical band appears when you shoot a very bright subject.	• Your camcorder is not a malfunction.
Some tiny white spots appear in the viewfinder or on the LCD screen.	• Slow shutter, low lux or NightShot +Slow shutter mode is activated. This is not a malfunction.
An unknown picture is displayed in the viewfinder or on the LCD screen.	• If 10 minutes elapse after you set the POWER switch to CAMERA or DEMO MODE is set to ON in the MENU settings without a cassette inserted, your camcorder automatically starts the demonstration. → Insert a cassette and the demonstration stops. You can also cancel DEMO MODE. (p. 104)
The picture is recorded in incorrect or unnatural colours.	• NIGHTSHOT is set to ON. → Set it to OFF. (p. 31)
Picture appears too bright, and the subject does not appear in the viewfinder or on the LCD screen.	• NIGHTSHOT is set to ON in a bright place. → Set it to OFF, or use the NightShot function in a dark place. (p. 31)

In the playback mode

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	• The POWER switch is set to CAMERA or OFF. → Set it to PLAYER. (p. 35) • The tape has run out. → Rewind the tape. (p. 35)
The playback picture is not clear or does not appear.	• The television's video channel is not adjusted correctly. → Adjust it. (p. 40)
There are four horizontal lines on the picture or the playback picture is not clear or does not appear.	• The video head may be dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (not supplied). (p. 132)
No sound or only a low sound is heard when playing back a tape.	• The stereo tape is played back with HiFi SOUND set to 2 in the MENU settings. → Set it to STEREO. (p. 100) • The volume is turned to minimum. → Open the LCD panel and press VOLUME +. (p. 35) • AUDIO MIX is set to ST2 side in the MENU settings. → Adjust AUDIO MIX. (p. 100)
The date search does not work correctly.	• The tape has a blank portion in the recorded portion (p. 68)
The picture which is recorded in the Digital8 ⊡ system is not played back.	• PB MODE is set to **Hi8**/**8** in the MENU settings. → Set it to AUTO. (p. 100)
The tape which is recorded in the Hi8/standard 8 system is not played back correctly.	• Set PB MODE to **Hi8**/**8** in the MENU settings. (p. 100)

(continued on the following page)

In the recording and playback modes

Symptom	Cause and/or Corrective Actions
The power does not turn on.	• The battery pack is not installed, or is dead or nearly dead. → Install a charged battery pack. (p. 12, 13) • The AC power adaptor is not connected to the mains. → Connect the AC power adaptor to the mains. (p. 18)
The end search function does not work.	• The tape was ejected after recording. • You have not recorded on the new cassette yet.
The battery pack is quickly discharged.	• The operating temperature is too low. • The battery pack is not fully charged. → Charge the battery pack again. (p. 13) • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 12)
The battery remaining indicator does not indicate the correct time.	• You have used the battery pack in an extremely hot or cold environment for a long time. • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 12) • The battery is dead. → Use a charged battery pack. (p. 12, 13)
The cassette cannot be removed from the holder.	• The power source is disconnected. → Connect it firmly. (p. 12, 18) • The battery is dead. → Use a charged battery pack or the AC power adaptor. (p. 12, 13)
The ◙ and ⏏ indicators flash and no functions except for cassette ejection work.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 131)

In the flash memory function (DCR-TRV510E only)

Symptom	Cause and/or Corrective Actions
Recording does not function.	• The STANDBY switch is not set to MEMORY. → Set it to MEMORY. (p. 80) • The built-in flash memory has already been recorded to its full capacity. → Erase unnecessary images and record again. (p. 97)
The image cannot be deleted.	• The image is protected. → Cancel image protection. (p. 96)

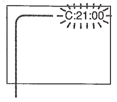
Others

Symptom	Cause and/or Corrective Actions
The Remote Commander supplied with your camcorder does not work.	• COMMANDER is set to OFF in the MENU settings. → Set it to ON. (p. 100) • Something is blocking the infrared rays. → Remove the obstacle. • The batteries are inserted in the battery holder with the + – polarities incorrectly matching the + – marks. → Insert the batteries with the correct polarity. (p. 144) • The batteries are dead. → Insert new ones. (p. 144)
The picture from a TV or VCR does not appear even when your camcorder is connected to outputs on the TV or VCR.	• DISPLAY is set to V-OUT/LCD in the MENU settings. → Set it to LCD. (p. 100)
The melody or beep sounds for 5 seconds.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 131) • Some troubles has occurred in your camcorder. → Remove the cassette and insert it again, then operate your camcorder.
While charging the battery pack, no indicator appears or the indicator flashes in the display window.	• The AC power adaptor is disconnected. → Connect it firmly. (p. 18) • Something is wrong with the battery pack. → Contact your Sony dealer or local authorized Sony service facility.

Self-diagnosis display

Your camcorder has a self-diagnosis display function.
This function displays the current condition of your camcorder as a 5-digit code (a combination of a letter and figures) in the viewfinder, on the LCD screen or in the display window. If a 5-digit code is displayed, check the following code chart. The last two digits (indicated by □□) will differ depending on the state of your camcorder.

Viewfinder (or LCD screen)



Self-diagnosis display

- C:□□:□□
  You can service your camcorder yourself.
- E:□□:□□
  Contact your Sony dealer or local authorized Sony facility.

Five-digit display	Cause and/or Corrective Actions
C:04:□□	• You are using a battery pack that is not an "InfoLITHIUM" battery pack. → Use an "InfoLITHIUM" battery pack. (p. 17)
C:21:□□	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 131)
C:22:□□	• The video heads are dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (not supplied). (p. 132)
C:31:□□ C:32:□□	• A malfunction other than the above that you can service has occurred. → Remove the cassette and insert it again, then operate your camcorder. → Disconnect the mains lead of the AC power adaptor or remove the battery pack. After reconnecting the power source, operate your camcorder.
E:61:□□ E:62:□□	• A malfunction that you cannot service has occurred. → Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit code. (example: E:61:10)

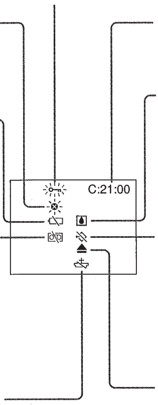
If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

English

Warning indicators and messages

If indicators and messages appear in the viewfinder, on the LCD screen or in the display window, check the following:
See the page in parentheses "( )" for more information.
- The warning messages do not appear in the mirror mode.
- The indicators and messages are displayed in yellow.

Warning indicators



The image data is protected

The video heads are dirty
Fast flashing:
- You need to clean the heads using the Sony V8-25CLD cleaning cassette (not supplied) (p. 132).

The battery is dead or nearly dead
Slow flashing:
- The battery is nearly dead.

Fast flashing:
- The battery is dead (p. 12).

Warning indicator as to tape
Slow flashing:
- The tape is near the end.
- No tape is inserted (p. 20).*
- The write-protect tab on the cassette is out (red) (p. 21)*

Fast flashing:
- The tape has run out (p. 20, 35).*

The lithium battery is weak or is not installed (p. 116)

Self-diagnosis display (p. 122)

Moisture condensation has occurred*
Fast flashing:
- Eject the cassette, turn off your camcorder, and leave it for about 1 hour with the cassette compartment open (p. 131).

You cannot use the built-in flash memory*
Slow flashing:
- The built-in flash memory is full.

Fast flashing:
- You cannot use the built-in flash memory. Format it (p. 103).

You need to eject the cassette
Slow flashing:
- The write-protect tab on the cassette is out (red) (p. 21).*

Fast flashing:
- Moisture condensation has occurred (p. 131).
- The tape has run out (p. 20, 35).*
- The self-diagnosis display function is activated (p. 122).

Warning messages

CLEANING CASSETTE	The video heads are dirty.

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* You hear the melody or beep sound.

Using your camcorder abroad

Using your camcorder abroad

You can use your camcorder in any country or area with the AC power adaptor supplied with your camcorder within 100 V to 240 V AC, 50/60 Hz.

Your camcorder is a PAL system based camcorder. If you want to view the playback picture on a TV, it must be a PAL system based TV with VIDEO/AUDIO input jack.
The following shows TV colour systems used overseas.

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

SECAM system
Bulgaria, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Ukraine, etc.

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference. Select WORLD TIME in the MENU settings. See page 100 for more information.

Использование Вашей видеокамеры за границей

Использование Вашей видеокамеры за границей

Вы можете использовать Вашу видеокамеру в любой стране или области с помощью сетевого адаптера переменного тока, прилагаемого к Вашей видеокамере, который можно использовать в пределах от 100 В до 240 В переменного тока с частотой 50/60 Гц.

Ваша видеокамера основана на системе PAL. Если Вы хотите просмотреть воспроизводимое изображение на телевизоре, то это должен быть телевизор, основанный на системе PAL, с входными гнездами VIDEO/AUDIO.
Ниже приведены системы цветного телевидения, используемые за рубежом.

Система PAL
Австралия, Австрия, Бельгия, Великобритания, Германия, Голландия, Гонконг, Дания, Испания, Италия, Китай, Кувейт, Малайзия, Новая Зеландия, Норвегия, Португалия, Сингапур, Словацкая Республика, Таиланд, Финляндия, Чешская Республика, Швейцария, Швеция и т.д.

Система PAL-M
Бразилия

Система PAL-N
Аргентина, Парагвай, Уругвай

Система NTSC
Багамские острова, Боливия, Венесуэла, Канада, Колумбия, Корея, Мексика, Перу, Суринам, США, Тайвань, Филиппины, Центральная Америка, Чили, Эквадор, Ямайка, Япония и т.д.

Система SECAM
Болгария, Венгрия, Гвиана, Ирак, Иран, Монако, Польша, Россия, Украина, Франция и т.д.

Простая установка разницы во времени на часах

Вы можете легко установить часы на местное время путем установки разницы во времени. Выберите команду WORLD TIME в установках MENU. Подробные сведения приведены на стр. 100.

Maintenance information and precautions

Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, the beep sounds and the ▣ indicator flashes. When the ⏏ indicator flashes at the same time, the cassette is inserted in your camcorder. If moisture condenses on the lens, the indicator will not appear.

If moisture condensation occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about 1 hour with the cassette compartment open. Your camcorder can be used again if the ▣ indicator does not appear when the power is turned on again.

Note on moisture condensation
Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a hot place as follows:
- You bring your camcorder from a ski slope into a place warmed up by a heating device
- You bring your camcorder from an air-conditioned car or room into a hot place outside
- You use your camcorder after a squall or a shower
- You use your camcorder in a high temperature and humidity place

How to prevent moisture condensation
When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and tightly seal it. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about 1 hour).

Информация по уходу за аппаратом и меры предосторожности

Конденсация влаги

Если видеокамера принесена прямо из холодного места в теплое, то внутри видеокамеры, на поверхности ленты или на объективе может произойти конденсанция влаги. В таком состоянии лента может прилипнуть к барабану головки и будет повреждена или же видеокамера не сможет работать надлежащим образом. Если внутри видеокамеры произошла конденсация влаги, то прозвучит зуммерный сигнал, а на экране ЖКД будет мигать индикатор ▣. Если в то же самое время будет мигать индикатор ⏏, это значит, что в видеокамеру вставлена кассета. Если влага сконденсировалась на объективе, индикатор появляться не будет.

Если произошла конденсация влаги

Ни одна из функций, кроме выталкивания кассеты, не будет работать. Извлеките кассету, выключите видеокамеру и оставьте ее приблизительно на 1 час с открытым отсеком для кассеты. Если при повторном включении питания индикатор ▣ не появится на дисплее, Вы можете снова пользоваться видеокамерой.

Примечание по конденсации влаги
Влага может образоваться, если Вы принесете Вашу видеокамеру из холодного места в теплое (или наоборот) или когда Вы используете Вашу видеокамеру в жарком месте в следующих случаях:
- Вы принесли Вашу видеокамеру с лыжного склона в помещение, где функционирует обогреватель
- Вы принесли Вашу видеокамеру из автомобиля или из комнаты с воздушным кондиционированием в жаркое место на улице
- Вы используете видеокамеру после грозы или дождя
- Вы используете Вашу видеокамеру в очень жарком и влажном месте.

Как предотвратить конденсацию влаги
Если видеокамера принесена из холодного места в теплое, то положите видеокамеру в полиэтиленовый пакет и плотно заклейте его. Выньте видеокамеру из полиэтиленового пакета, когда температура воздуха внутри пакета достигнет температуры окружающего воздуха (приблизительно через 1 час).

Maintenance information and precautions

Maintenance information

Cleaning the video head

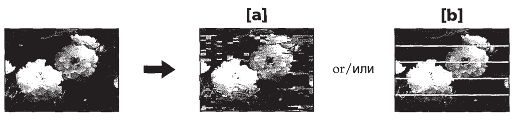
To ensure normal recording and clear pictures, clean the video heads. The video head may be dirty when:
- mosaic-pattern noise appears on the playback picture.
- playback pictures do not move.
- playback pictures are hardly visible.
- playback pictures do not appear.
- the ⊗ indicator and " CLEANING CASSETTE" message appear one after another or the ⊗ indicator flashes on the LCD screen or in the viewfinder.

Информация по уходу за аппаратом и меры предосторожности

Информация по уходу за аппаратом

Чистка видеоголовок

Для обеспечения нормальной записи и четкого изображения следует периодически чистить видеоголовки. Видеоголовки возможно загрязнены, если:
- на воспроизводимом изображении появляются помехи типа мозаики.
- воспроизводимое изображение не двигается.
- воспроизводимое изображение с трудом различимо.
- воспроизводимое изображение не появляется на экране.
- на экране ЖКД или в видоискателе появляются один за другим индикатор ⊗ и сообщение " CLEANING CASSETTE" или же мигает индикатор ⊗.



If the above problem, **[a]** or **[b]** occurs, clean the video heads with the Sony V8-25CLD cleaning cassette (not supplied). Check the picture and if the above problem persists, repeat cleaning.

Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using a LCD Cleaning Kit (not supplied) to clean the LCD screen.

Если возникнут приведенные выше проблемы типа **[a]** или **[b]**, почистите видеоголовки с помощью очистительной кассеты Sony V8-25CLD (не прилагается). Проверьте изображение и, если описанные выше проблемы не устранились, повторите чистку.

Чистка экрана ЖКД

Если на экране ЖКД появятся отпечатки или пыль, рекомендуется воспользоваться очистительным набором для ЖКД (не прилагается) для чистки экрана ЖКД.

Maintenance information and precautions

Precautions

Camcorder operation

- Operate your camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in this operating instructions.
- If any solid object or liquid get inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- Keep your camcorder away from strong magnetic fields or mechanical vibration.
- Do not touch the LCD screen with your fingers or a sharp-pointed object.
- If your camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

On handling tapes

Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape and if the recording tab is in or out.

Camcorder care

- Remove the tape, and periodically turn on the power, operate the CAMERA and PLAYER sections and play back a tape for about 3 minutes when your camcorder is not to be used for a long time.

Информация по уходу за аппаратом и меры предосторожности

Меры предосторожности

Эксплуатация видеокамеры

- Эксплуатируйте видеокамеру от 7,2 В (батарейный блок) или 8,4 В (сетевой адаптер переменного тока).
- Что касается эксплуатации видеокамеры от постоянного и переменного тока, используйте принадлежности, рекомендуемые в данной инструкции по эксплуатации.
- Если какой-нибудь твердый предмет или жидкость попали внутрь корпуса, то выключите видеокамеру и проверьте ее у дилера Sony перед дальнейшей ее эксплуатацией.
- Избегайте грубого обращения с видеокамерой или механических ударов. Будьте особенно осторожны с объективом.
- Если видеокамера не используется, держите выключатель POWER в положении OFF.
- Не заворачивайте Вашу видеокамеру, например, в полотенце, и не эксплуатируйте ее в таком состоянии. В противном случае может произойти повышение температуры внутри видеокамеры.
- Держите Вашу видеокамеру подальше от сильных магнитных полей или механической вибрации.
- Не прикасайтесь к экрану ЖКД своими пальцами или острыми предметами.
- При эксплуатации Вашей видеокамеры в холодном месте, на экране ЖКД может появляться остаточное изображение. Это не является неисправностью.
- При эксплуатации Вашей видеокамеры, задняя сторона экрана ЖКД может нагреваться. Это не является неисправностью.

Относительно обращения с лентами

Не вставляйте ничего в маленькие отверстия на задней стороне кассеты. Эти отверстия используются для определения типа и толщины ленты, а также для определения наличия или отсутствия лепестка защиты записи на ленте.

Уход за видеокамерой

- Периодически вынимайте кассету и включайте питание, оперируйте устройствами CAMERA и PLAYER и воспроизводите ленту порядка 3-х минут, если Ваша видеокамера не будет использоваться длительное время.

Maintenance information and precautions

- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into your camcorder. When you use your camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause your camcorder to malfunction, and sometimes this malfunction cannot be repaired.

Connection to your PC

- When recording with i.LINK cable the image processed or edited by your PC, use a new Hi8 **Hi8** tape.
  (for models which have the DV IN jack only)
- When inputting the image recorded by Hi8/standard8 (analog) system into your PC, dub the image into a Digital8 Ð or DV tape first, and then input it into your PC.

AC power adaptor

- Unplug the unit from the mains when you are not using the unit for a long time. To disconnect the mains lead, pull it out by the plug. Never pull the mains lead itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the mains lead forcibly, or place a heavy object on it. This will damage the cord and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.

Информация по уходу за аппаратом и меры предосторожности

- Чистите объектив с помощью мягкой кисточки для удаления пыли. Если имеются отпечатки пальцев на объективе, то удалите их с помощью мягкой ткани.
- Чистите корпус видеокамеры с помощью сухой мягкой ткани или мягкой ткани, слегка смоченной раствором умеренного моющего средства. Не используйте каких-либо типов растворителей, которые могут повредить отделку.
- Не допускайте попадания песка в видеокамеру. Если Вы используете видеокамеру на песчаном пляже или в каком-либо пыльном месте, предохраните аппарат от песка или пыли. Песок или пыль могут привести к неисправности аппарата, которая иногда может быть неисправимой.

Подключение к персональному компьютеру пользователя

- Применить новую ленту Hi8 **Hi8** при записи изображения, обработанного или смонтированного на персональном компьютере пользователя, с применением кабеля i.LINK (для моделей, оснащенных только гнездом DV IN).
- При вводе изображения, записанного по системе Hi8/Standard8 (аналоговой), на персональный компьютер пользователя надо копировать изображение предварительно на Digital8 Ð или DV-ленту.

Сетевой адаптер переменного тока

- Отсоедините аппарат от электрической сети, если он не используется длительное время. Для отсоединения сетевого шнура потяните его за разъем. Никогда не тяните за сам шнур.
- Не эксплуатируйте аппарат с поврежденным шнуром или же в случае, если аппарат упал или был поврежден.
- Не сгибайте сетевой провод силой и не ставьте на него тяжелые предметы. Это повредит провод и может привести к пожару или поражению электрическим током.
- Будьте осторожны, чтобы никакие металлические предметы не соприкасались с металлическими контактами соединительной пластины. Если это случится, то может произойти короткое замыкание, и аппарат может быть поврежден.

Maintenance information and precautions

- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

Notes on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following:

- Be sure to insert the batteries with the + – polarities matched to the + – marks.
- Dry batteries are not rechargeable.
- Do not use a combination of new and old batteries.
- Do not use different types of batteries.
- Current flows from batteries when you are not using them for a long time.
- Do not use leaking batteries.

If batteries are leaking

- Wipe off the liquid in the battery compartment carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any problem occurs, unplug your camcorder and contact your nearest Sony dealer.

Информация по уходу за аппаратом и меры предосторожности

- Всегда поддерживайте металлические контакты в чистоте.
- Не разбирайте аппарат.
- Не подвергайте аппарат механической вибрации и не роняйте его.
- При использовании аппарата, особенно во время зарядки, держите его подальше от приемников АМ-радиовещания и видеоаппаратуры. Приемники АМ-радиовещания и видеоаппаратура нарушают АМ-радиоприем и работу видеоаппаратуры.
- В процессе эксплуатации аппарат нагревается. Это является вполне нормальным.
- Не размещайте аппарат в местах:
  - Чрезмерно жарких или холодных
  - Пыльных или грязных
  - Очень влажных
  - Подверженных вибрации

Примечание к сухим батарейкам

Во избежание возможного повреждения видеокамеры вследствие утечки внутреннего вещества батареек или коррозии соблюдайте следующее:

- При установке батареек соблюдайте правильную полярность + – в соответствии с метками + –.
- Сухие батарейки нельзя перезаряжать.
- Не используйте новые батарейки вместе со старыми.
- Не используйте батарейки разного типа.
- Если батарейки не используются длительное время, они постепенно разряжаются.
- Не используйте батарейки, которые потекли.

Если произошла утечка внутреннего вещества батареек

- Перед тем, как заменить батарейки, тщательно протрите остатки жидкости в отсеке для батареек.
- В случае попадания жидкости на кожу, промойте жидкость водой.
- В случае попадания жидкости в глаза, промойте свои глаза большим количеством воды, после чего обратитесь к врачу.

В случае возникновения каких-либо проблем, отключите Вашу видеокамеру от источника питания и обратитесь в ближайший сервисный центр Sony.

— Quick Reference —

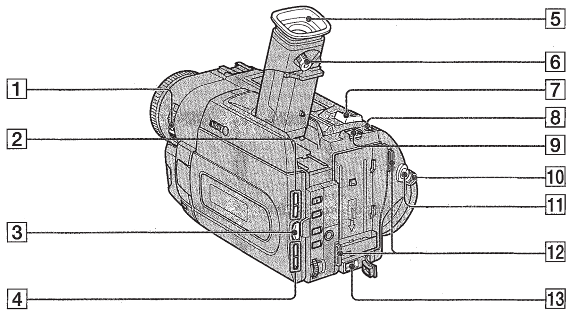
Identifying the parts and controls

Camcorder

— Оперативный справочник —

Обозначение частей и регуляторов

Видеокамера

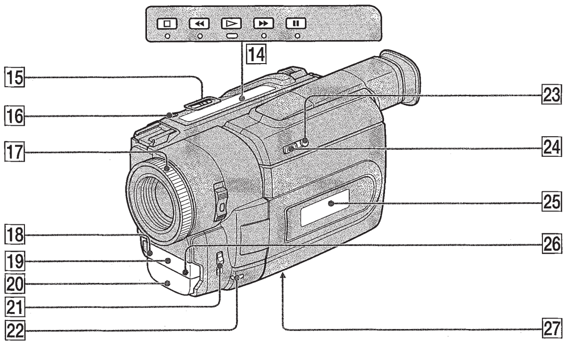


1. **POWER switch** (p. 22)
2. **LCD BRIGHT buttons** (p. 23)
3. **OPEN button** (p. 22)
4. **VOLUME buttons** (p. 35)
5. **Eyecup**
6. **Viewfinder lens adjustment lever** (p. 26)
7. **Power zoom lever** (p. 27)
8. **PHOTO button** (p. 44)
9. **BATT RELEASE lever** (p. 12)
10. **STANDBY switch** (p. 22)
11. **START/STOP button** (p. 22)
12. **Hooks for shoulder strap** (p. 141)
13. **DC IN jack** (p. 13)

This mark indicates that this product is a genuine accessory for Sony video products.
When purchasing Sony video products, Sony recommends that you purchase accessories with this "GENUINE VIDEO ACCESSORIES" mark.

1. **Переключатель POWER** (стр. 22)
2. **Кнопки LCD BRIGHT** (стр. 23)
3. **Кнопка OPEN** (стр. 22)
4. **Кнопки VOLUME** (стр. 35)
5. **Окуляр**
6. **Рычаг регулировки объектива видоискателя** (стр. 26)
7. **Рычаг приводного вариообъектива** (стр. 27)
8. **Кнопка PHOTO** (стр. 44)
9. **Рычаг BATT RELEASE** (стр. 12)
10. **Переключатель STANDBY** (стр. 22)
11. **Кнопка START/STOP** (стр. 22)
12. **Крючки для плечевого ремня** (стр. 141)
13. **Гнездо DC IN** (стр. 13)

Данный знак означает, что это изделие является подлинной принадлежностью для видеоаппаратуры Sony. При покупке видеоаппаратуры Sony рекомендуется приобретать для нее принадлежности Sony с таким знаком "GENUINE VIDEO ACCESSORIES".

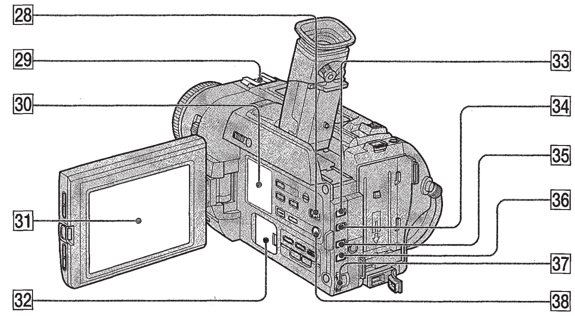


14 **Video control buttons** (p. 35, 38, 67)
■ STOP (stop)
◀◀ REW (rewind)
▶ PLAY (playback)
▶▶ FF (fastforward)
❚❚ PAUSE (pause)
The control buttons light up when you set the POWER switch to PLAYER.
15 **EDITSEARCH buttons** (p. 33)
16 **LASER LINK button** (p. 42)
17 **Focus ring** (p. 60)
18 **Camera recording lamp** (p. 22)
19 **Infrared rays emitter** (p. 31, 42)
20 **Microphone**
21 **FOCUS switch** (p. 60)
22 **PUSH AUTO button** (p. 60)
23 **+SLOW SHUTTER button** (p. 31)
24 **NIGHTSHOT switch** (p. 31)
25 **Display window** (p. 145)
26 **Remote sensor** (p. 143)
27 **Tripod receptacle** (base)
Make sure that the length of the tripod screw is less than 6.5 mm (9/32 inch). Otherwise, you cannot attach the tripod securely and the screw may damage your camcorder.

What is LASER LINK?
The LASER LINK system sends and receives pictures and sound between video equipment having the ⚡ mark by using infrared rays.

14 **Кнопки видеоконтроля** (стр. 35, 38, 67)
■ STOP (остановка)
◀◀ REW (ускоренная перемотка назад)
▶ PLAY (воспроизведение)
▶▶ FF (ускоренная перемотка вперед)
❚❚ PAUSE (пауза)
Кнопки контроля высвечиваются при установке переключателя POWER в положение PLAYER.
15 **Кнопки EDITSEARCH** (стр. 33)
16 **Кнопка LASER LINK** (стр. 42)
17 **Кольцо фокусировки** (стр. 60)
18 **Лампа записи видеокамеры** (стр. 22)
19 **Излучатель инфракрасных лучей** (стр. 31, 42)
20 **Микрофон**
21 **Переключатель FOCUS** (стр. 60)
22 **Кнопка PUSH AUTO** (стр. 60)
23 **Кнопка +SLOW SHUTTER** (стр. 31)
24 **Переключатель NIGHTSHOT** (стр. 31)
25 **Окошко дисплея** (стр. 145)
26 **Датчик дистанционного управления** (стр. 143)
27 **Гнездо для треноги** (основание)
Убедитесь, что длина винта треноги менее 6,5 мм. В противном случае Вы не сможете надежно прикрепить треногу, а винт может повредить Вашу видеокамеру.

Что такое LASER LINK?
Система LASER LINK посылает и принимает сигналы изображения и звука между видеоаппаратурой, имеющей знак ⚡, с помощью инфракрасных лучей.

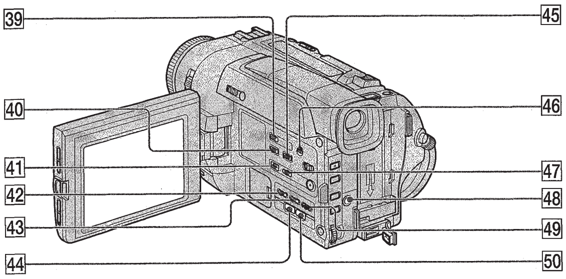


28 **START/STOP MODE switch** (p. 28)
29 **Intelligent accessory shoe**
30 **Speaker**
31 **LCD screen** (p. 23)
32 **Lithium battery compartment** (p. 117)
33 **FADER button** (p. 49)
34 **BACK LIGHT button** (p. 30)
35 **PROGRAM AE button** (p. 57)
36 **EXPOSURE button** (p. 59)
37 **SEL/PUSH EXEC dial** (p. 52)
38 **MENU button** (p. 47, 100)

Intelligent Accessory Shoe
Notes on the intelligent accessory shoe
- The intelligent accessory shoe supplies power to optional accessories such as a video light or microphone.
- The intelligent accessory shoe is linked to STANDBY, allowing you to turn the power supplied by the shoe on and off. Refer to the operating instructions of the accessory for further information.
- The intelligent accessory shoe has a safety device for fixing the installed accessory securely. To connect an accessory, press down and push it to the end, and then tighten the screw.
- To remove an accessory, loosen the screw, and then press down and pull out the accessory.

28 **Переключатель START/STOP MODE** (стр. 28)
29 **Держатель для установки принадлежностей**
30 **Динамик**
31 **Экран ЖКД** (стр. 23)
32 **Отсек для литиевой батарейки** (стр. 117)
33 **Кнопка FADER** (стр. 49)
34 **Кнопка BACK LIGHT** (стр. 30)
35 **Кнопка PROGRAM AE** (стр. 57)
36 **Кнопка EXPOSURE** (стр. 59)
37 **Диск SEL/PUSH EXEC** (стр. 52)
38 **Кнопка MENU** (стр. 47, 100)

Intelligent Accessory Shoe
Примечания относительно держателя для установки принадлежностей
- Держатель для установки принадлежностей подает питание на вспомогательные принадлежности, такие как видеоподсветка или микрофон.
- Держатель для установки принадлежностей связан с режимом ожидания STANDBY, позволяя Вам включать и выключать подаваемое держателем питание. Подробные сведения приведены в инструкции по эксплуатации вспомогательных принадлежностей.
- В держателе для установки вспомогательных принадлежностей имеется предохранительное устройство для надежной фиксации установленной принадлежности. Для подсоединения принадлежности нажмите ее вниз и нажмите до упора, а затем затяните винт.
- Для снятия принадлежности ослабьте винт, а затем нажмите принадлежность вниз и потяните ее.

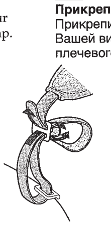


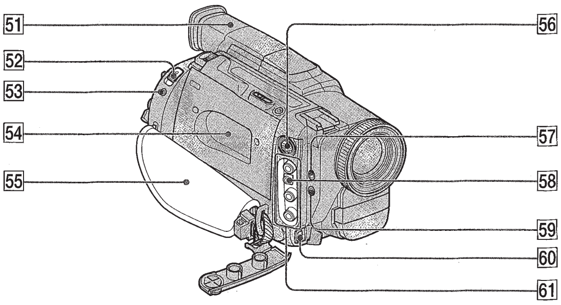
39 **DATA CODE button** (p. 37)
40 **DISPLAY button** (p. 36)
41 **DIGITAL EFFECT button** (p. 54, 65)
42 **MEMORY PLAY button** (DCR-TRV510E only) (p. 88)
43 **MEMORY INDEX button** (DCR-TRV510E only) (p. 90)
44 **MEMORY– button** (DCR-TRV510E only) (p. 88, 90)
45 **END SEARCH button** (p. 33)
46 **◷ (self timer) button** (DCR-TRV510E only) (p. 25)
47 **PICTURE EFFECT button** (p. 52, 64)
48 **DIGITAL I/O jack** (DCR-TRV510E only) (p. 92)
49 **MEMORY DELETE button** (DCR-TRV510E only) (p. 97)
50 **MEMORY+ button** (DCR-TRV510E only) (p. 88, 90)

Attaching the shoulder strap
Attach the shoulder strap supplied with your camcorder to the hooks for the shoulder strap.

39 **Кнопка DATA CODE** (стр. 37)
40 **Кнопка DISPLAY** (стр. 36)
41 **Кнопка DIGITAL EFFECT** (стр. 54, 65)
42 **Кнопка MEMORY PLAY** (Только модель DCR-TRV510E) (стр. 88)
43 **Кнопка MEMORY INDEX** (Только модель DCR-TRV510E) (стр. 90)
44 **Кнопка MEMORY –** (Только модель DCR-TRV510E) (стр. 88, 90)
45 **Кнопка END SEARCH** (стр. 33)
46 **Кнопка ◷ (таймер самозапуска)** (Только модель DCR-TRV510E) (стр. 25)
47 **Кнопка PICTURE EFFECT** (стр. 52, 64)
48 **Гнездо DIGITAL I/O** (Только модель DCR-TRV510E) (стр. 92)
49 **Кнопка MEMORY DELETE** (Только модель DCR-TRV510E) (стр. 97)
50 **Кнопка MEMORY+** (Только модель DCR-TRV510E) (стр. 88, 90)

Прикрепление плечевого ремня
Прикрепите плечевой ремень, прилагаемый к Вашей видеокамере, к крючкам для плечевого ремня.





51 **Viewfinder** (p. 26)
52 **EJECT switch** (p. 20)
53 **LANC Ⓛ control jack**
LANC stands for Local Application Control Bus System. The Ⓛ control jack is used for controlling the tape transport of video equipment and other peripherals connected to the video equipment. This jack has the same function as the jack indicated as CONTROL L or REMOTE.
54 **Cassette compartment** (p. 20)
55 **Grip strap**
56 **S VIDEO jack** (p. 40, 46, 72)
57 **🎧 (headphones) jack**
When you use headphones, the speaker on your camcorder is silent.
58 **RFU DC OUT (RFU adaptor DC output) jack** (p. 41)
59 **MIC jack (PLUG IN POWER)**
Connect an external microphone (not supplied). This jack also accepts a "plug-in-power" microphone.
If you connect a 2-pin microphone, supply power from DC OUT jack.
60 **i DV OUT jack** (p. 74)
This "i.LINK" mark is a trademark of Sony Corporation and indicates that this product is in agreement with IEEE 1394-1995 specifications and their revisions.

The i DV OUT jack is i.LINK compatible.
61 **VIDEO/AUDIO jacks** (p. 40, 46, 72)

51 **Видоискатель** (стр. 26)
52 **Выключатель EJECT** (стр. 20)
53 **Гнездо управления LANC Ⓛ**
LANC означает систему канала местного управления. Гнездо управления Ⓛ используется для контроля за перемещением ленты видеоаппаратуры и периферийных устройств, подключенных к ней. Данное гнездо имеет такую же функцию, как и разъемы, обозначенные как CONTROL L или REMOTE.
54 **Кассетный отсек** (стр. 20)
55 **Ремень для захвата**
56 **Гнездо S VIDEO** (стр. 40, 46, 72)
57 **Гнездо 🎧 (головные телефоны)**
Если Вы используете головные телефоны, динамик на Вашей видеокамере отключается.
58 **Гнездо RFU DC OUT (выход пост. тока ВЧ-адаптера)** (стр. 41)
59 **Гнездо MIC (PLUG IN POWER)**
Для подсоединения внешнего микрофона (не прилагается). Это гнездо также позволяет подключить микрофон "с выключателем питания". При подсоединении 2-штырькового микрофона, подвод питания следует выполнять через гнездо DC OUT.
60 **Гнездо i DV OUT** (стр. 74)
Знак "i.LINK" является торговой маркой корпорации Sony и указывает на то, что продукция соответствует техническим условиям IEEE 1394-1995 и их дополнениям.

Гнездо i DV OUT совместимо с каналом передачи сигналов.
61 **Гнезда VIDEO/AUDIO** (стр. 40, 46, 72)

Identifying the parts and controls

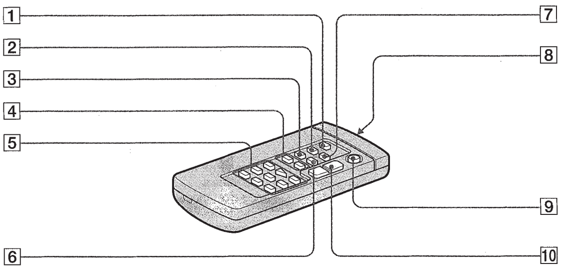
Remote Commander

The buttons that have the same name on the Remote Commander as on your camcorder function identically to the buttons on your camcorder.

Обозначение частей и регуляторов

Пульт дистанционного управления

Кнопки пульта дистанционного управления, которые имеют одинаковые наименования с кнопками на видеокамере, функционируют идентично.



1 **PHOTO button** (p. 44)

2 **DISPLAY button** (p. 36)

3 **SEARCH MODE button** (p. 68, 70, 71)

4 **⏮/⏭ buttons** (p. 68, 70, 71)

5 **Tape transport buttons** (p. 38)

6 **DATA CODE button** (p. 37)

7 **ZERO SET MEMORY button** (p. 62, 67)

8 **Transmitter**
Point toward the remote sensor to control the camcorder after turning on the camcorder.

9 **START/STOP button** (p. 22)

10 **Power zoom button** (p. 27)

1 **Кнопка PHOTO** (стр. 44)

2 **Кнопка DISPLAY** (стр. 36)

3 **Кнопка SEARCH MODE** (стр. 68, 70, 71)

4 **Кнопки ⏮/⏭** (стр. 68, 70, 71)

5 **Кнопки перемещения ленты** (стр. 38)

6 **Кнопка DATA CODE** (стр. 37)

7 **Кнопка ZERO SET MEMORY** (стр. 62, 67)

8 **Передатчик**
Направьте на датчик для управления видеокамерой после включения видеокамеры.

9 **Кнопка START/STOP** (р. 22)

10 **Кнопка приводного вариообъектива** (стр. 27)

Identifying the parts and controls

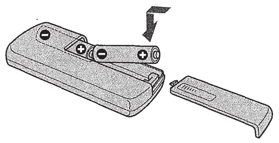
To prepare the Remote Commander

Insert 2 R6 (size AA) batteries by matching the + and – polarities on the batteries to the + – marks inside the battery compartment.

Обозначение частей и регуляторов

Для подготовки пульта дистанционного управления

Вставьте 2 батарейки R6 (размера AA), соблюдая надлежащую полярность + и – на батарейках со знаками + – внутри отсека для батареек.

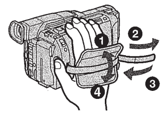


Notes on the Remote Commander
- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- Your camcorder works in the commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR in the Commander mode VTR 2, we recommend changing the commander mode or covering the sensor of the VCR with black paper.

Примечания к пульту дистанционного управления
- Держите дистанционный датчик подальше от сильных источников света, как например, прямые солнечные лучи или иллюминация. В противном случае дистанционное управление может не действовать.
- Данная видеокамера работает в режиме пульта дистанционного управления VTR 2. Режимы пульта дистанционного управления 1, 2 и 3 используются для отличия данной видеокамеры от других КВМ фирмы Sony во избежание неправильной работы дистанционного управления. Если Вы используете другой КВМ фирмы Sony, работающий в режиме VTR 2, мы рекомендуем Вам изменить режим пульта дистанционного управления или закрыть дистанционный датчик КВМ черной бумагой.

Fastening the grip strap

Прикрепление ремня для захвата



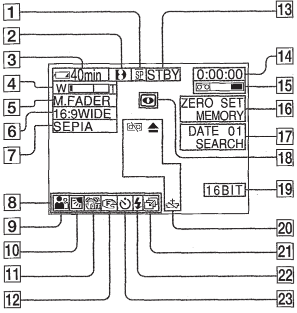
Fasten the grip strap firmly.

Плотно прикрепите ремень для захвата.

Identifying the parts and controls

Operation indicators

Viewfinder/Видоискатель



1 **Tape speed mode indicator**
This indicator appears while playing back in the Hi8/standard 8 system
/Mirror mode indicator (p. 23)

2 **Format indicator** (p. 113)
Ɓ, **Hi8** or **8** indicator appears.

3 **Remaining battery time indicator** (p. 13, 29)

4 **Exposure indicator** (p. 59)/**Zoom indicator** (p. 27)

5 **Fader indicator** (p. 49)/**Digital effect indicator** (p. 54, 65)

6 **Wide mode indicator** (p. 47)

7 **Picture effect indicator** (p. 52, 64)

8 **LCD bright indicator** (p. 23)/**Volume indicator** (p. 35)/**Data code indicator** (p. 37)

9 **PROGRAM AE indicator** (p. 57)

10 **Backlight indicator** (p. 30)

11 **SteadyShot off indicator** (p. 101)

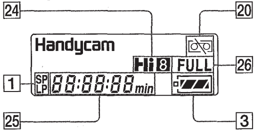
12 **Manual focusing indicator** (p. 60)

(continued on the following page)

Обозначение частей и регуляторов

Рабочие индикаторы

Display window/Окошко дисплея



1 **Индикатор режима скорости ленты**
Этот индикатор появляется при воспроизведении в системе Hi8/стандартной системе 8
/Индикатор зеркального режима (стр. 23)

2 **Индикатор формата** (стр. 113)
Появится индикатор **Ɓ**, **Hi8** или **8**.

3 **Индикатор оставшегося заряда батарейного блока** (стр. 13, 29)

4 **Индикатор экспозиции** (стр. 59)/**индикатор вариообъектива** (стр. 27)

5 **Индикатор фейдера** (стр. 49)/**индикатор цифрового эффекта** (стр. 54, 65)

6 **Индикатор широкоформатного режима** (стр. 47)

7 **Индикатор эффекта изображения** (стр. 52, 64)

8 **Индикатор яркости ЖКД** (стр. 23)/**индикатор громкости** (стр. 35) / **индикатор кода данных** (стр. 37)

9 **Индикатор PROGRAM AE** (стр. 57)

10 **Индикатор задней подсветки** (стр. 30)

11 **Индикатор выключенной устойчивой съемки** (стр. 106)

12 **Индикатор ручной фокусировки** (стр. 60)

(продолжение на сл. стр.)

Identifying the parts and controls

13 **Standby/Recording indicator** (p. 22)/**Video control mode** (p. 38)

14 **Tape counter** (p. 29, 62, 67)/**Time code indicator** (p. 29)/**Self-diagnosis display function indicator** (p. 122)/**5SEC mode indicator** (p. 28)/**Photo recording indicator** (p. 44)

15 **Remaining tape indicator** (p. 29)

16 **ZERO SET MEMORY indicator** (p. 62, 67)

17 **Search mode indicator** (p. 33, 68, 70, 71)

18 **NIGHTSHOT indicator** (p. 31, 32)

19 **Audio mode indicator** (p. 104)

20 **Warning indicators** (p. 123)

21 **Continuous mode indicator** (DCR-TRV510E only) (p. 83)

22 **Video flash ready indicator**
This indicator appears when you use the video flash light (not supplied).

23 **Self-timer indicator** (DCR-TRV510E only) (p. 25)

24 **Hi8 indicator** (p. 113)
This indicator appears while playing back in the Hi8 system.

25 **Tape counter** (p. 29, 62, 67)/**Time code indicator** (p. 29)**Self-diagnosis display function indicator** (p. 122)/**Remaining battery time indicator** (p. 13)

26 **FULL charge indicator** (p. 13)

Обозначение частей и регуляторов

13 **Индикатор режима ожидания/записи** (стр. 22)/**режим видеоконтроля** (стр. 38)

14 **Индикатор счетчика ленты** (стр. 29, 62, 67)/**индикатор кода времени** (стр. 29)/**индикатор функции самодиагностики** (стр. 128)/**индикатор режима 5SEC** (стр. 28)/**индикатор фотосъемки** (стр. 44)

15 **Индикатор оставшейся ленты** (стр. 29)

16 **Индикатор ZERO SET MEMORY** (стр. 62, 67)

17 **Индикатор режима поиска** (стр. 33, 68, 70, 71)

18 **Индикатор NIGHTSHOT** (стр. 31, 32)

19 **Индикатор звукового режима** (стр. 109)

20 **Предупреждающие индикаторы** (стр. 129)

21 **Индикатор непрерывного режима** (Только модель DCR-TRV510E) (стр. 83)

22 **Индикатор готовности видеовспышки**
Этот индикатор появляется при использовании видеовспышки (не прилагается).

23 **Индикатор таймера самозапуска** (Только модель DCR-TRV510E) (стр. 25)

24 **Индикатор Hi8** (стр. 113)
Этот индикатор появляется при воспроизведении в системе Hi8

25 **Индикатор счетчика ленты** (стр. 29, 62, 67)/**индикатор кода времени** (стр. 29)/**индикатор функции самодиагностики** (стр. 128)/**индикатор времени оставшегося заряда батарейного блока** (стр. 13)

26 **Индикатор зарядки FULL** (стр. 13)

Quick Function Guide

Functions to adjust exposure (in the recording mode)

• In a dark place	NIGHTSHOT (p. 31)
• In insufficient light	Low lux mode (p. 56)
• In dark environments such as sunset, fireworks, or general night views	Sunset & moon mode (p. 56)
• Shooting backlit subjects	BACK LIGHT (p. 30)
• In spotlight, such as at the theatre or a formal event	Spotlight mode (p. 56)
• In strong light or reflected light, such as at a beach in midsummer or on a ski slope	Beach & ski mode (p. 56)

Functions to give images more impact (in the recording mode)

• Smooth transition between scenes	FADER (p. 49)
• Taking a still picture	PHOTO (p. 44)
• Digital processing of images	PICTURE EFFECT (p. 52)
• Processing a scene using digital effects	DIGITAL EFFECT (p. 54)
• Creating a soft background for subjects	Soft portrait mode (p. 56)

Functions to give a natural appearance to your recordings (in the recording mode)

• Preventing deterioration of picture quality in digital zoom	D ZOOM [MENU] (p. 100)
• Focusing manually	Manual focus (p. 60)
• Shooting distant subjects	Landscape mode (p. 56)
• Recording fast-moving subjects	Sports lesson mode (p. 56)

Functions to use in editing (in the recording mode)

• Watching the picture on a wide-screen TV	Wide mode (p. 47)

Functions to use after recording (in the playback mode)

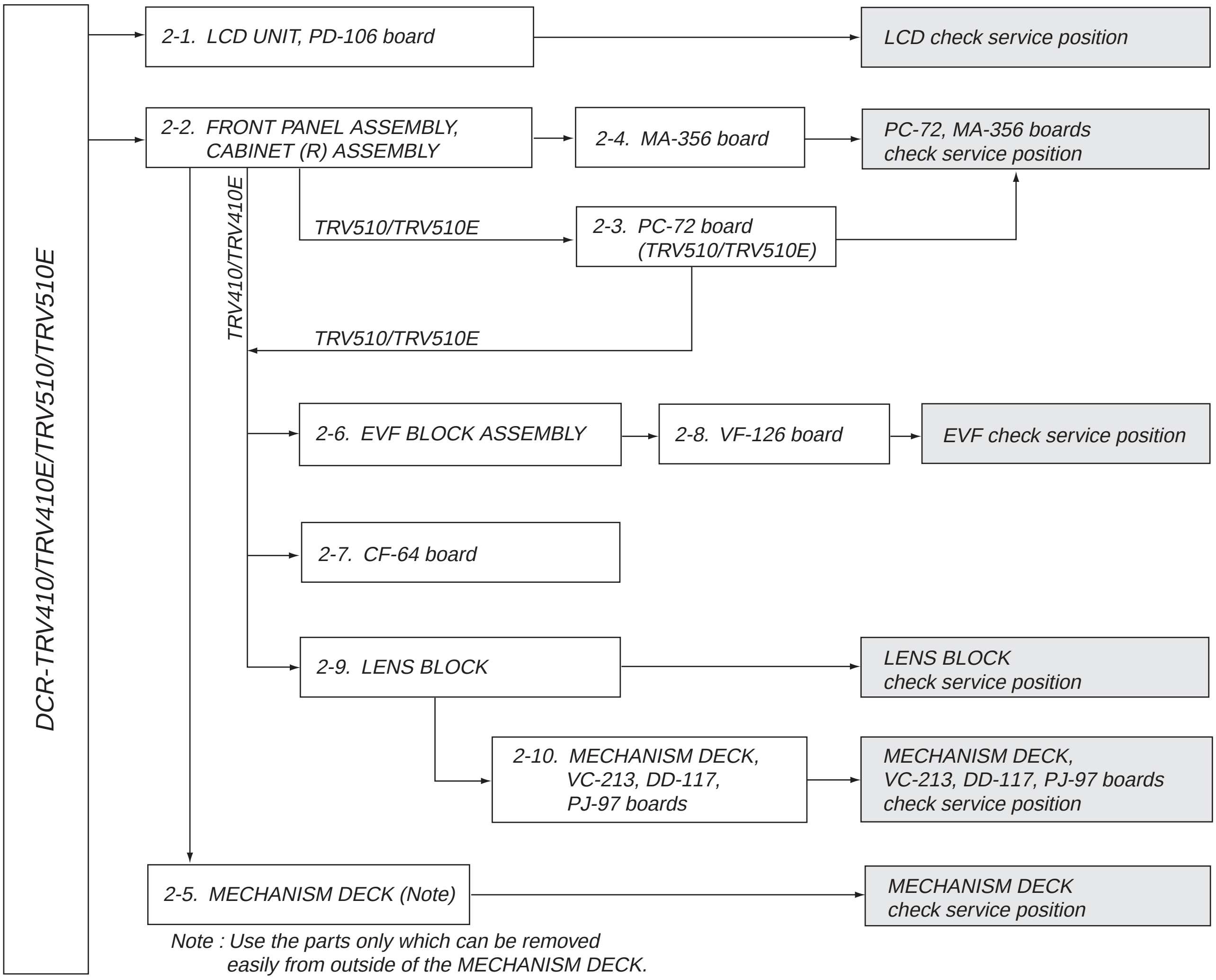
• Digital processing of recorded images	PICTURE EFFECT (p. 64)
• Processing a recorded scene using digital effects	DIGITAL EFFECT (p. 65)
• Displaying the date/time or recording data when you recorded	Data code (p. 37)
• Quickly locating a desired scene	Zero set memory (p. 62, 67)
• Searching for scenes recorded in the photo mode	Photo search (p. 70)
• Scanning scenes recorded in the photo mode	Photo scan (p. 71)
• Playing back on monaural sound or sub sound	HiFi SOUND [MENU] (p. 100)
• Playing back the picture on a TV without connecting a cord	LASER LINK (p. 42)

Functions using the built-in flash memory (DCR-TRV510E only)

• Connecting to your PC	PC mode (p. 92)
• Recording still picture at high quality	FRAME (p. 78)

SECTION 2
DISASSEMBLY

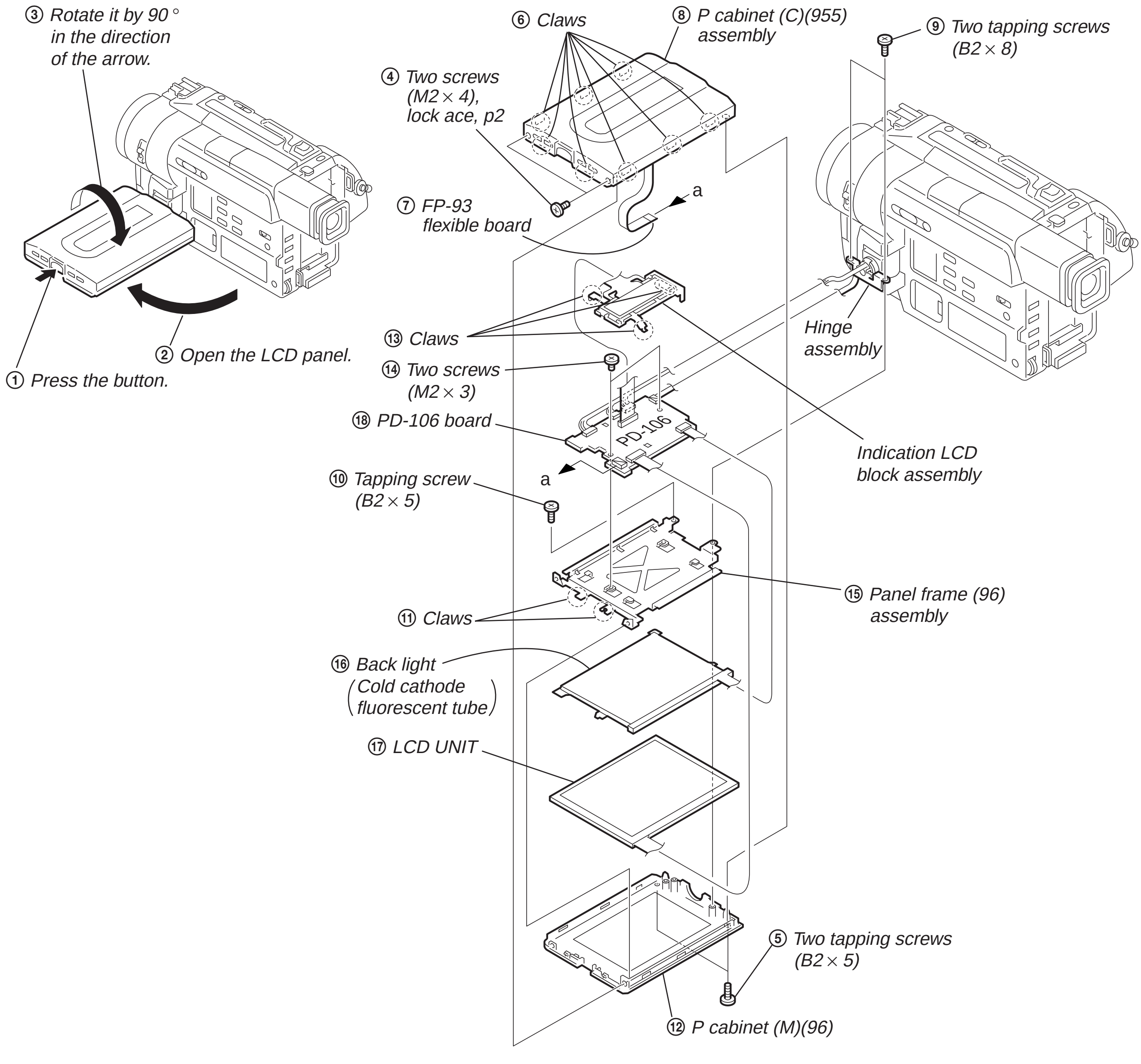
The following flow chart shows the disassembly procedure.


DCR-TRV410/TRV410E/TRV510/TRV510E
2-1. LCD UNIT, PD-106 board
LCD check service position
2-2. FRONT PANEL ASSEMBLY, CABINET (R) ASSEMBLY
2-4. MA-356 board
PC-72, MA-356 boards check service position
TRV410/TRV410E
TRV510/TRV510E
2-3. PC-72 board (TRV510/TRV510E)
TRV510/TRV510E
2-6. EVF BLOCK ASSEMBLY
2-8. VF-126 board
EVF check service position
2-7. CF-64 board
2-9. LENS BLOCK
LENS BLOCK check service position
2-10. MECHANISM DECK, VC-213, DD-117, PJ-97 boards
MECHANISM DECK, VC-213, DD-117, PJ-97 boards check service position
2-5. MECHANISM DECK (Note)
MECHANISM DECK check service position

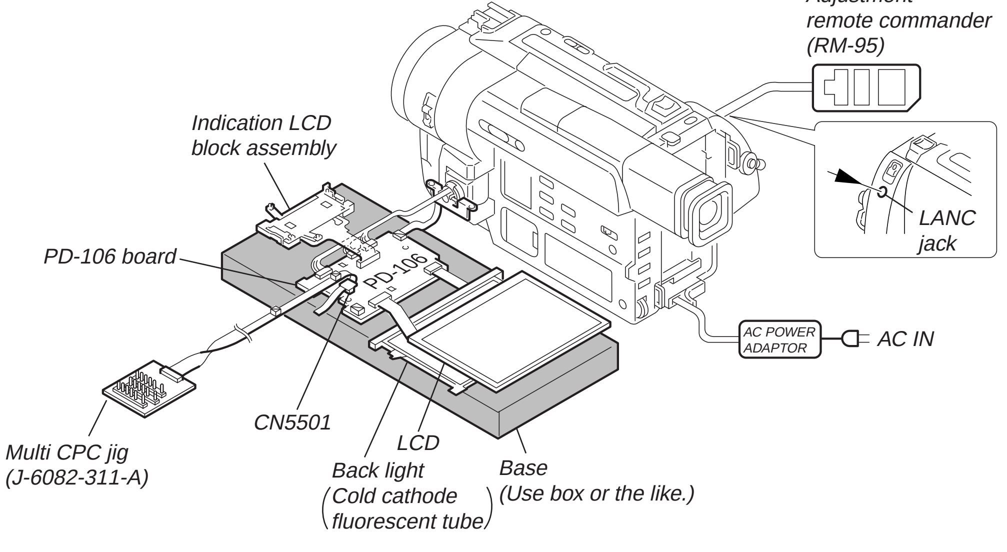
Note : Use the parts only which can be removed easily from outside of the MECHANISM DECK.

NTSC MODEL : DCR-TRV410/TRV510
PAL MODEL : DCR-TRV410E/TRV510E

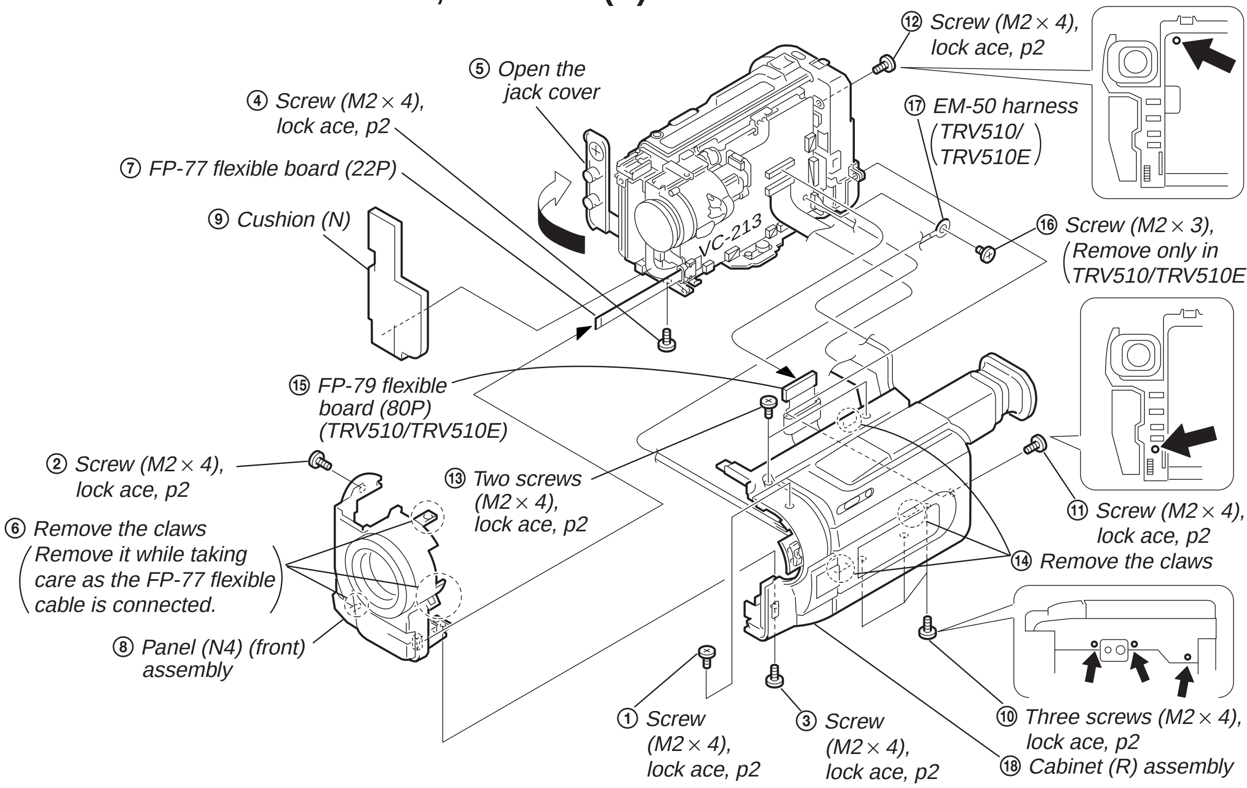
2-1. LCD UNIT, PD-106 BOARD


③ Rotate it by 90 ° in the direction of the arrow.
② Open the LCD panel.
① Press the button.
⑥ Claws
⑧ P cabinet (C)(955) assembly
④ Two screws (M2 × 4), lock ace, p2
⑦ FP-93 flexible board
a
⑨ Two tapping screws (B2 × 8)
Hinge assembly
⑬ Claws
⑭ Two screws (M2 × 3)
⑱ PD-106 board
PD-106
Indication LCD block assembly
⑩ Tapping screw (B2 × 5)
a
⑮ Panel frame (96) assembly
⑪ Claws
⑯ Back light (Cold cathode fluorescent tube)
⑰ LCD UNIT
⑤ Two tapping screws (B2 × 5)
⑫ P cabinet (M)(96)

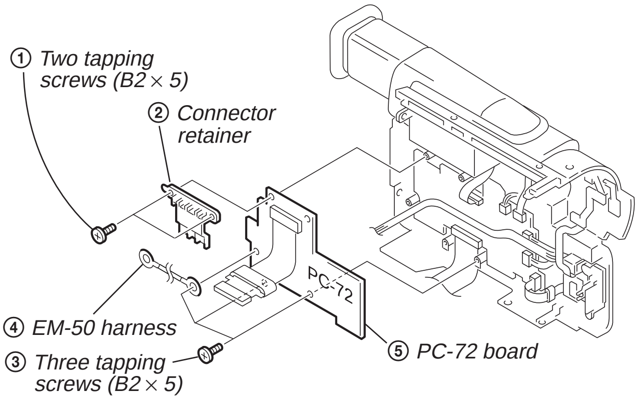
[LCD CHECK SERVICE POSITION]


Adjustment remote commander (RM-95)
Indication LCD block assembly
LANC jack
PD-106 board
PD-106
AC POWER ADAPTOR
AC IN
Multi CPC jig (J-6082-311-A)
CN5501
LCD
Back light (Cold cathode fluorescent tube)
Base (Use box or the like.)

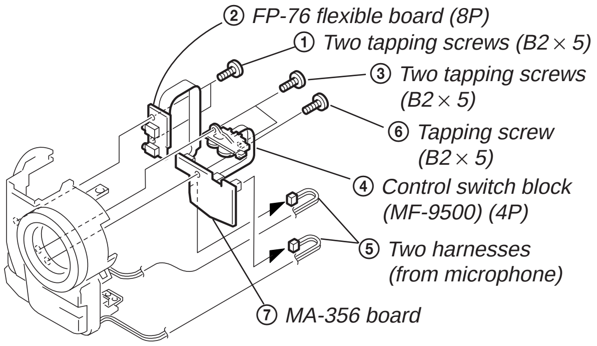
2-2. FRONT PANEL ASSEMBLY, CABINET (R) ASSEMBLY


⑫ Screw (M2 × 4), lock ace, p2
⑤ Open the jack cover
④ Screw (M2 × 4), lock ace, p2
⑰ EM-50 harness (TRV510/ TRV510E)
⑦ FP-77 flexible board (22P)
⑨ Cushion (N)
VC-213
⑯ Screw (M2 × 3), (Remove only in TRV510/TRV510E)
⑮ FP-79 flexible board (80P) (TRV510/TRV510E)
② Screw (M2 × 4), lock ace, p2
⑬ Two screws (M2 × 4), lock ace, p2
⑪ Screw (M2 × 4), lock ace, p2
⑥ Remove the claws (Remove it while taking care as the FP-77 flexible cable is connected.)
⑭ Remove the claws
⑧ Panel (N4) (front) assembly
① Screw (M2 × 4), lock ace, p2
③ Screw (M2 × 4), lock ace, p2
⑩ Three screws (M2 × 4), lock ace, p2
⑱ Cabinet (R) assembly

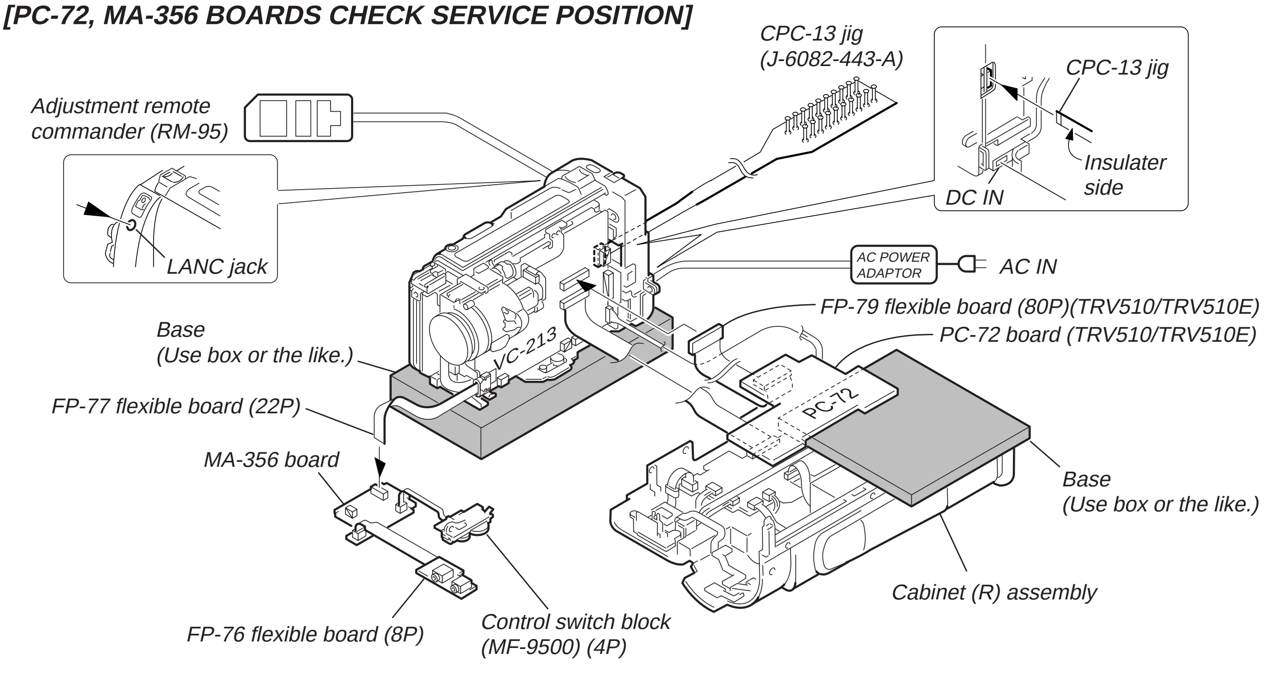
2-3. PC-72 BOARD (TRV510/TRV510E)


① Two tapping screws (B2 × 5)
② Connector retainer
PC-72
④ EM-50 harness
③ Three tapping screws (B2 × 5)
⑤ PC-72 board

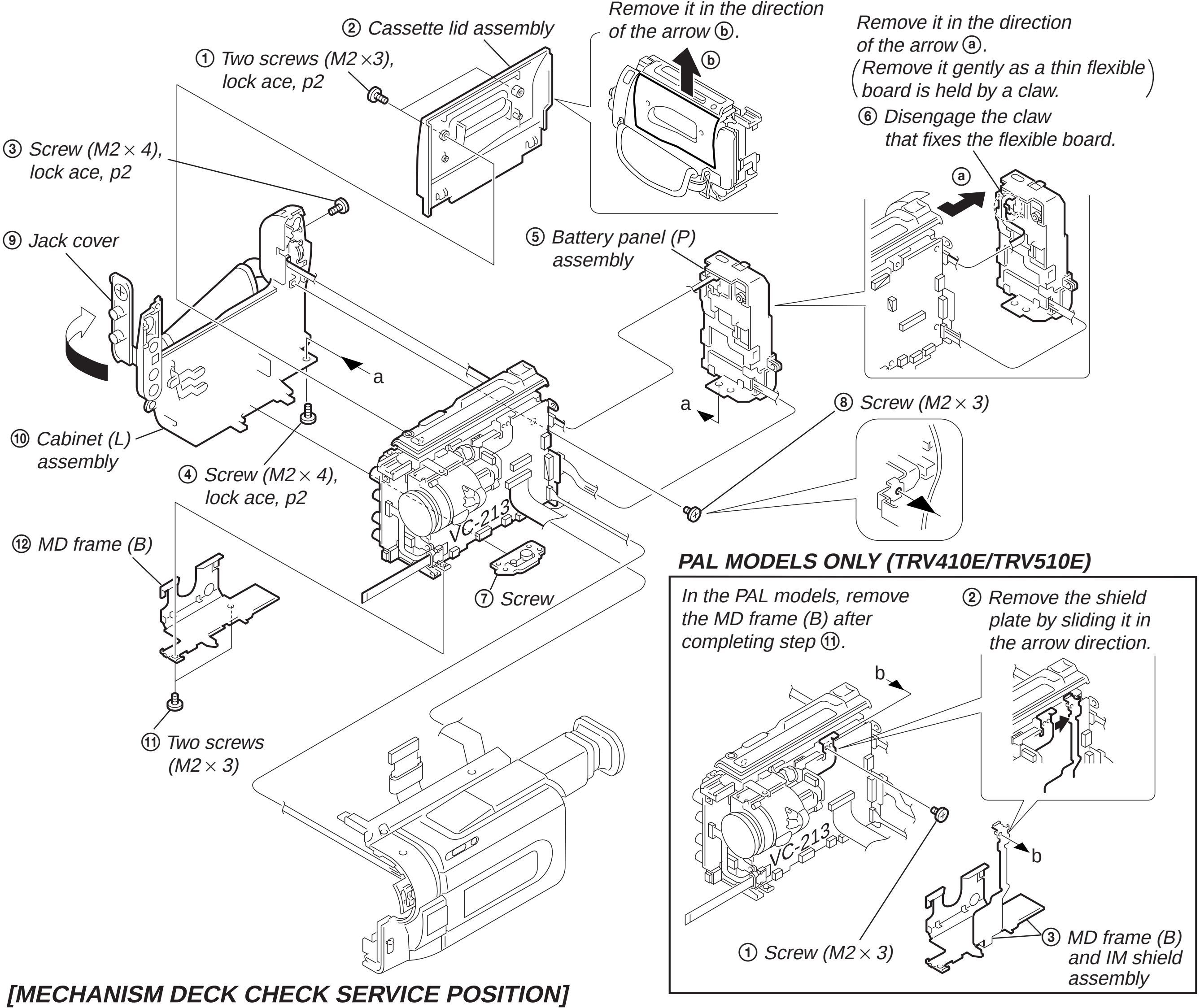
2-4. MA-356 BOARD


② FP-76 flexible board (8P)
① Two tapping screws (B2 × 5)
③ Two tapping screws (B2 × 5)
⑥ Tapping screw (B2 × 5)
④ Control switch block (MF-9500) (4P)
⑤ Two harnesses (from microphone)
⑦ MA-356 board

[PC-72, MA-356 BOARDS CHECK SERVICE POSITION]


CPC-13 jig (J-6082-443-A)
CPC-13 jig
Adjustment remote commander (RM-95)
Insulater side
DC IN
LANC jack
AC POWER ADAPTOR
AC IN
FP-79 flexible board (80P)(TRV510/TRV510E)
PC-72 board (TRV510/TRV510E)
Base (Use box or the like.)
VC-213
PC-72
FP-77 flexible board (22P)
MA-356 board
Base (Use box or the like.)
Cabinet (R) assembly
Control switch block (MF-9500) (4P)
FP-76 flexible board (8P)

2-5. MECHANISM DECK


① Two screws (M2 ×3), lock ace, p2
② Cassette lid assembly
Remove it in the direction of the arrow ⓑ.
ⓑ
Remove it in the direction of the arrow ⓐ.
(Remove it gently as a thin flexible board is held by a claw.)
⑥ Disengage the claw that fixes the flexible board.
ⓐ
③ Screw (M2 × 4), lock ace, p2
⑨ Jack cover
⑤ Battery panel (P) assembly
a
a
⑧ Screw (M2 × 3)
⑩ Cabinet (L) assembly
④ Screw (M2 × 4), lock ace, p2
VC-213
⑫ MD frame (B)
⑦ Screw
⑪ Two screws (M2 × 3)

PAL MODELS ONLY (TRV410E/TRV510E)

In the PAL models, remove the MD frame (B) after completing step ⑪.

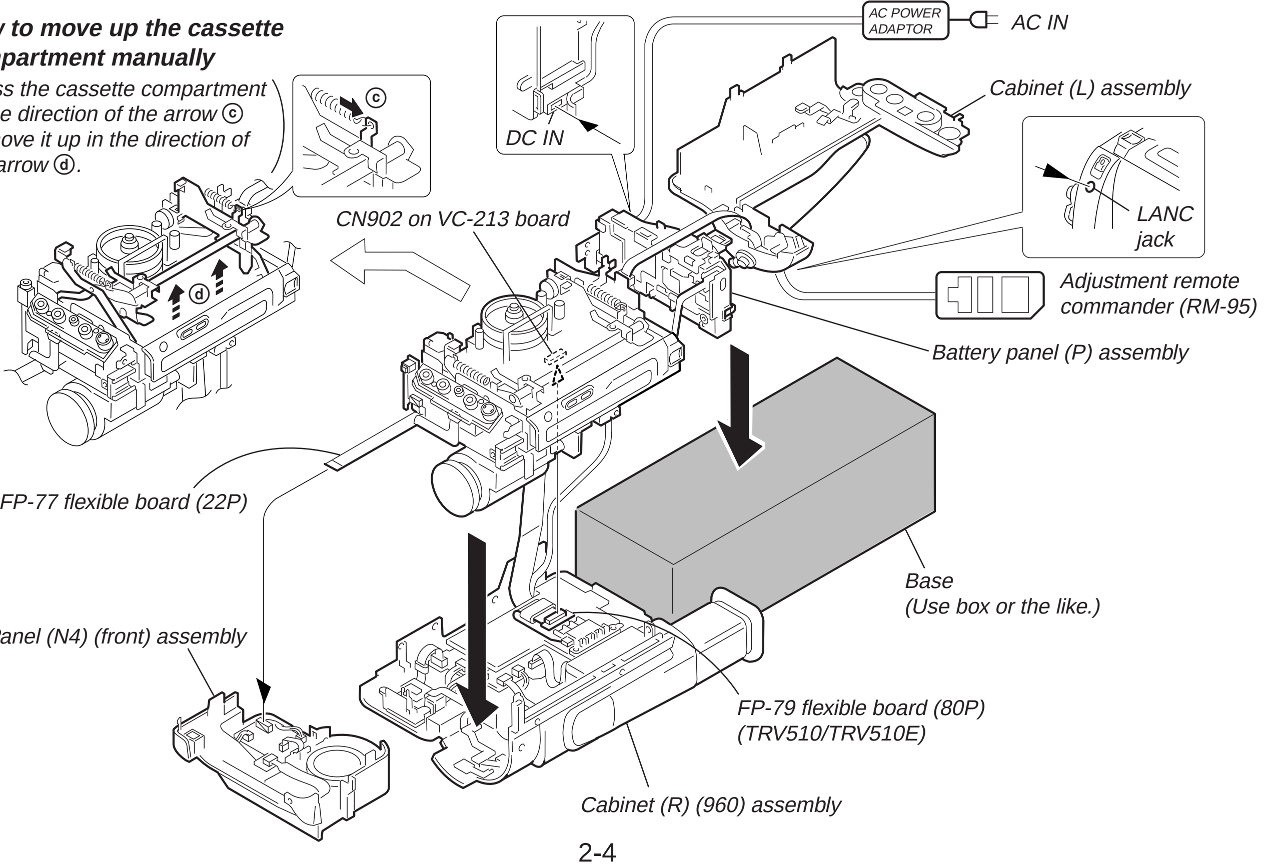
② Remove the shield plate by sliding it in the arrow direction.

b
b
VC-213
① Screw (M2 × 3)
③ MD frame (B) and IM shield assembly

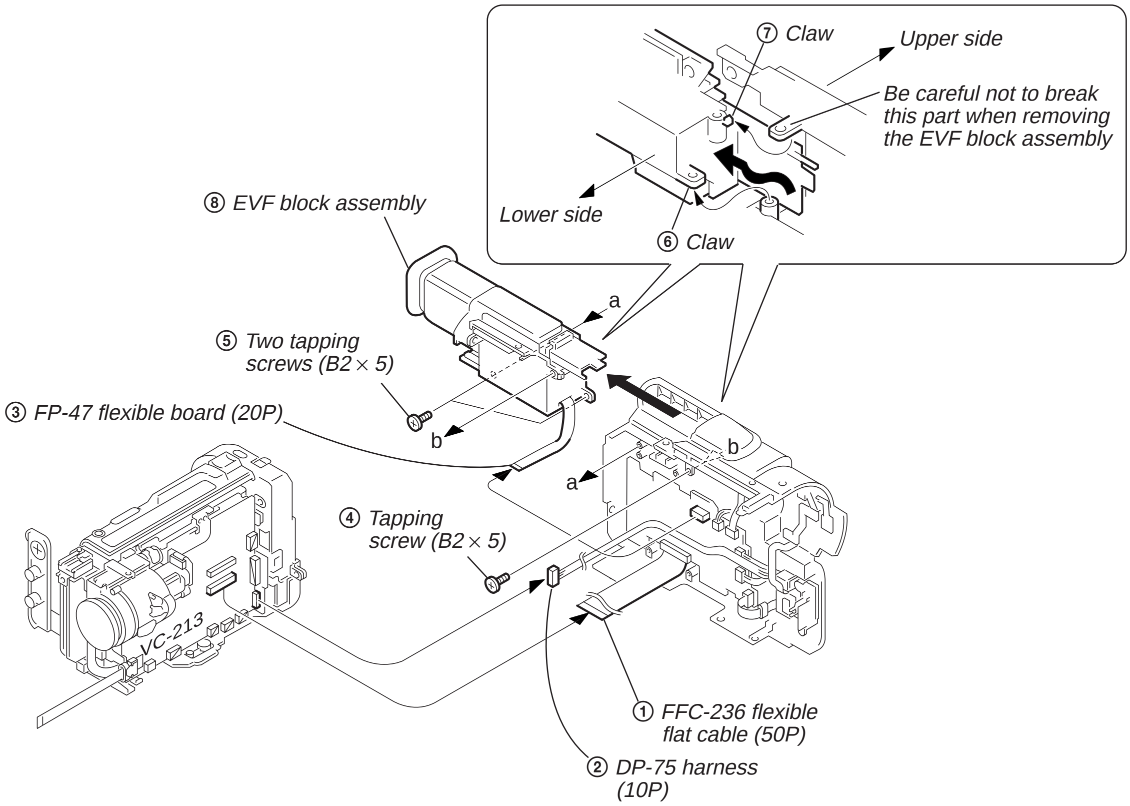
[MECHANISM DECK CHECK SERVICE POSITION]

• How to move up the cassette compartment manually

(Press the cassette compartment in the direction of the arrow ⓒ to move it up in the direction of the arrow ⓓ.)

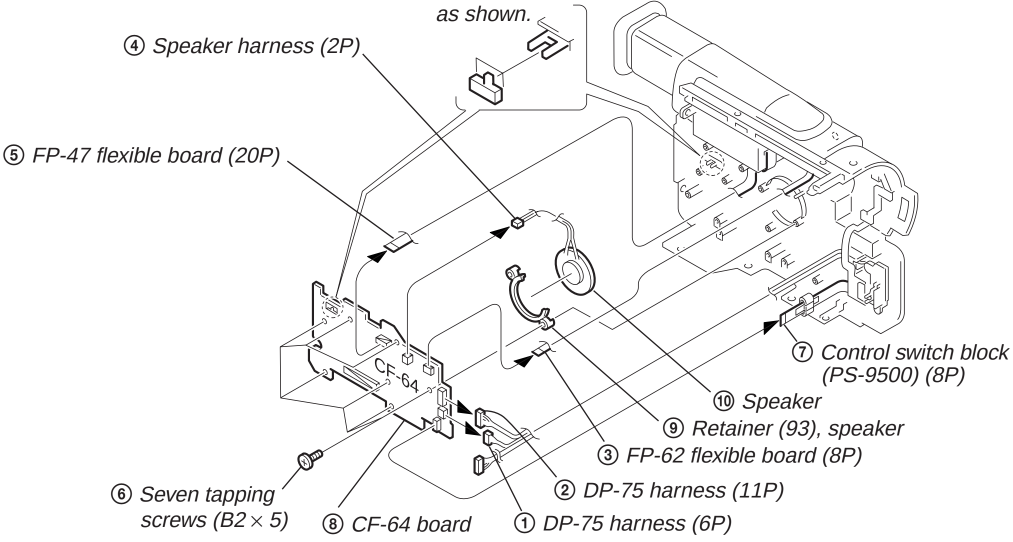

ⓒ
ⓓ
DC IN
AC POWER ADAPTOR
AC IN
Cabinet (L) assembly
LANC jack
CN902 on VC-213 board
Adjustment remote commander (RM-95)
Battery panel (P) assembly
FP-77 flexible board (22P)
Base
(Use box or the like.)
Panel (N4) (front) assembly
FP-79 flexible board (80P)
(TRV510/TRV510E)
Cabinet (R) (960) assembly

2-6. EVF BLOCK ASSEMBLY

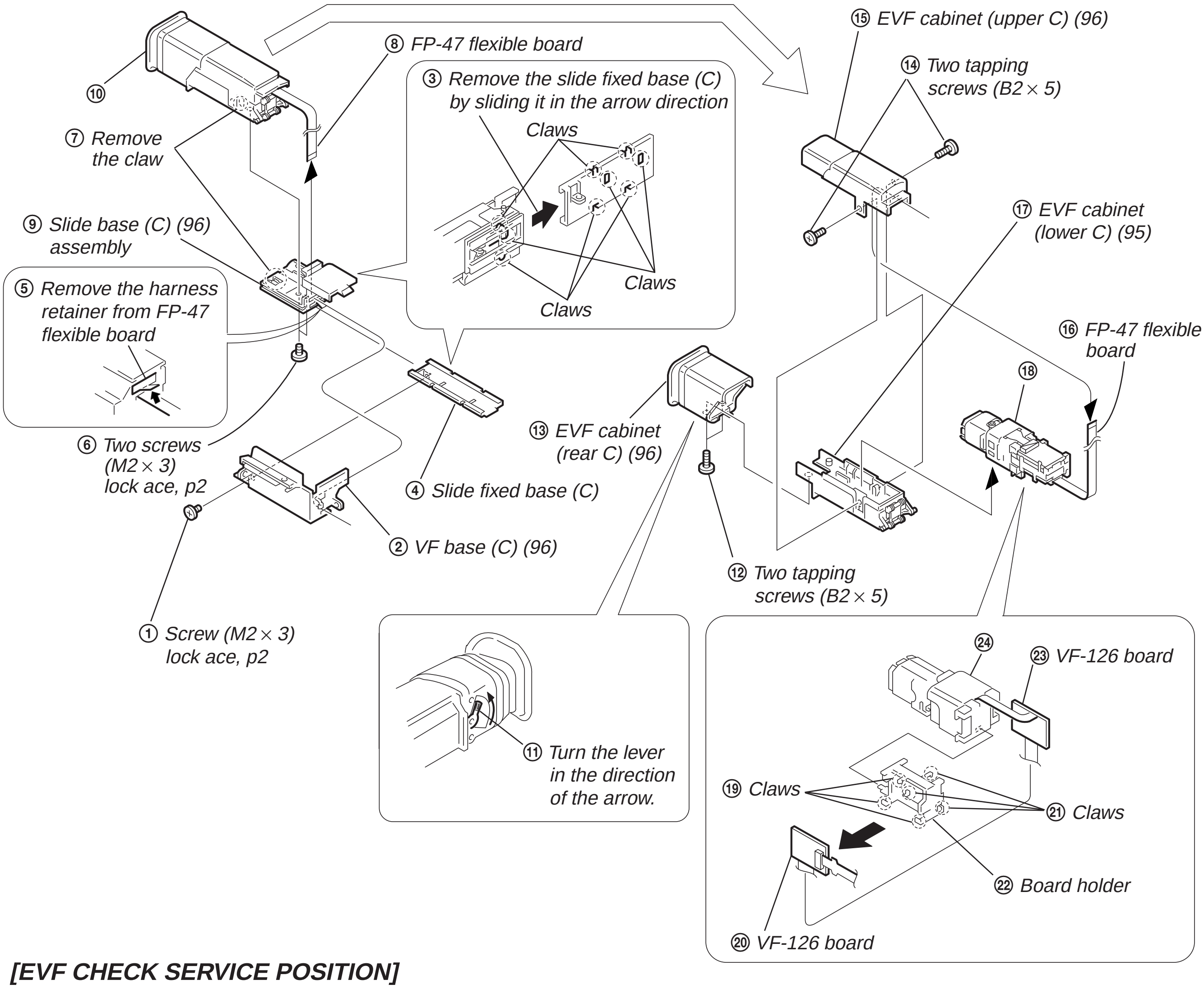

⑦ Claw
Upper side
Be careful not to break this part when removing the EVF block assembly
⑧ EVF block assembly
Lower side
⑥ Claw
a
⑤ Two tapping screws (B2 × 5)
③ FP-47 flexible board (20P)
b
b
a
④ Tapping screw (B2 × 5)
VC-213
① FFC-236 flexible flat cable (50P)
② DP-75 harness (10P)

2-7. CF-64 BOARD

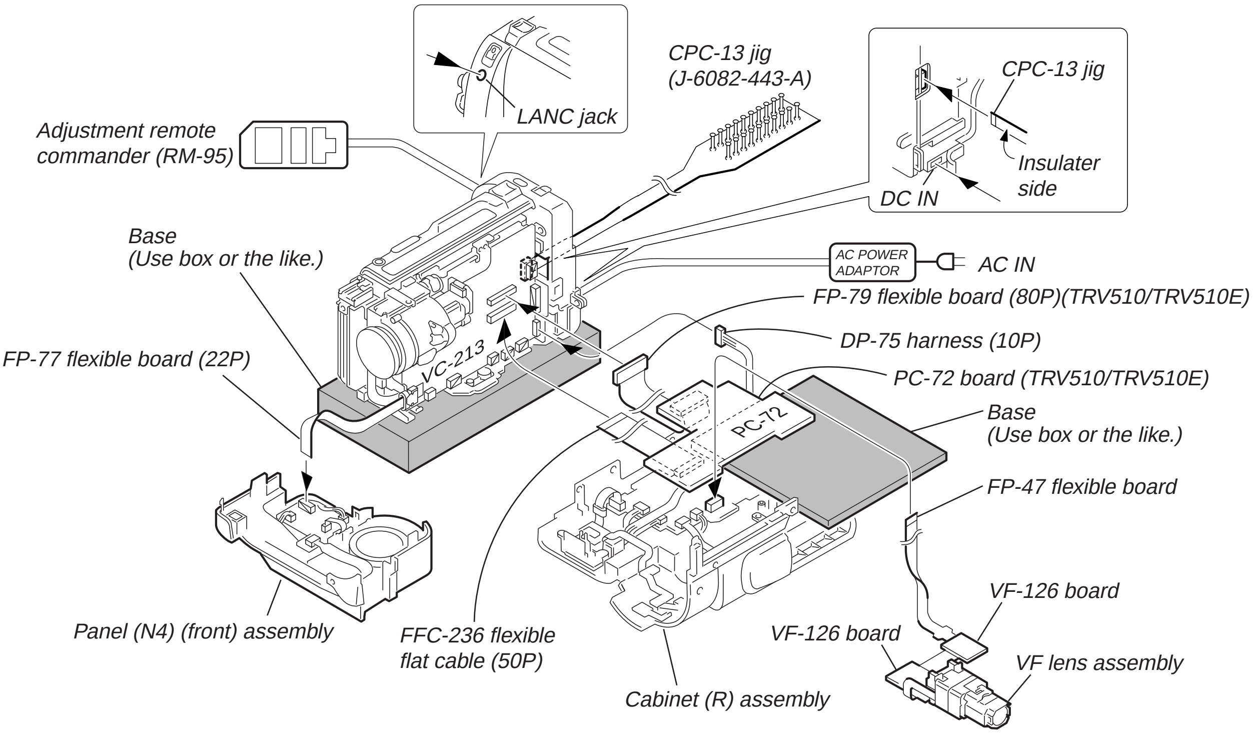
Note : When attaching it.
Align the switch position as shown.


④ Speaker harness (2P)
⑤ FP-47 flexible board (20P)
CF-64
⑦ Control switch block (PS-9500) (8P)
⑩ Speaker
⑨ Retainer (93), speaker
③ FP-62 flexible board (8P)
② DP-75 harness (11P)
⑥ Seven tapping screws (B2 × 5)
⑧ CF-64 board
① DP-75 harness (6P)

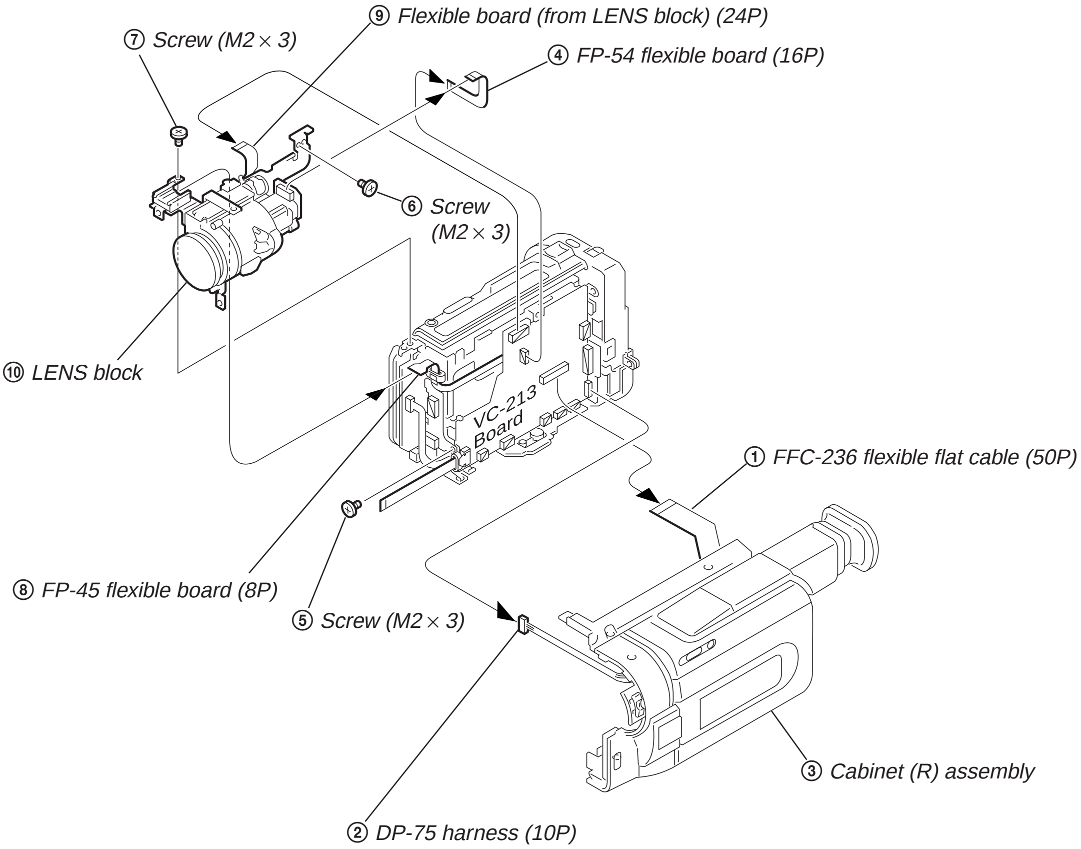
2-8. VF-126 BOARD


⑮ EVF cabinet (upper C) (96)
⑧ FP-47 flexible board
⑭ Two tapping screws (B2 × 5)
⑩
③ Remove the slide fixed base (C) by sliding it in the arrow direction
Claws
⑦ Remove the claw
⑰ EVF cabinet (lower C) (95)
⑨ Slide base (C) (96) assembly
Claws
Claws
⑤ Remove the harness retainer from FP-47 flexible board
⑯ FP-47 flexible board
⑱
⑬ EVF cabinet (rear C) (96)
⑥ Two screws (M2 × 3) lock ace, p2
④ Slide fixed base (C)
② VF base (C) (96)
⑫ Two tapping screws (B2 × 5)
① Screw (M2 × 3) lock ace, p2
㉔
㉓ VF-126 board
⑪ Turn the lever in the direction of the arrow.
⑲ Claws
㉑ Claws
㉒ Board holder
⑳ VF-126 board

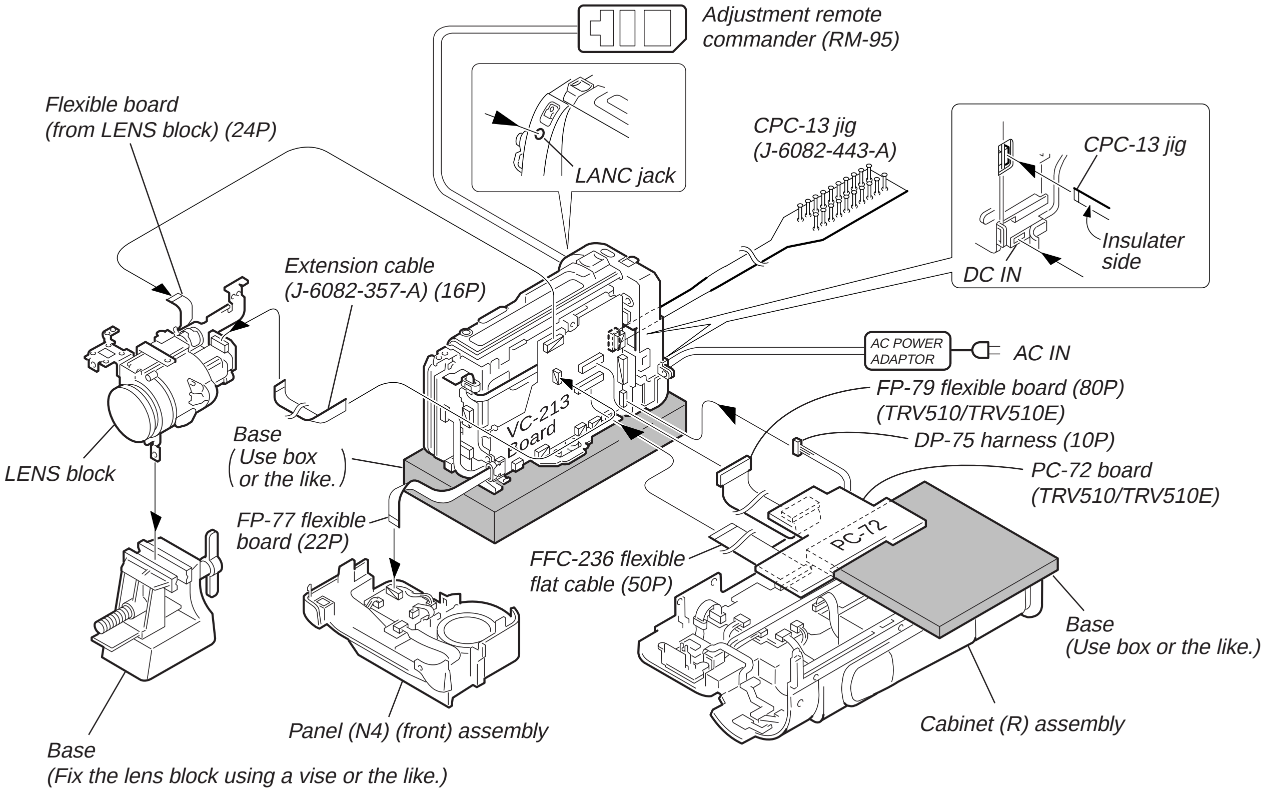
[EVF CHECK SERVICE POSITION]


LANC jack
CPC-13 jig (J-6082-443-A)
CPC-13 jig
Adjustment remote commander (RM-95)
Insulater side
DC IN
Base (Use box or the like.)
AC POWER ADAPTOR
AC IN
FP-79 flexible board (80P)(TRV510/TRV510E)
DP-75 harness (10P)
FP-77 flexible board (22P)
VC-213
PC-72 board (TRV510/TRV510E)
PC-72
Base (Use box or the like.)
FP-47 flexible board
VF-126 board
Panel (N4) (front) assembly
FFC-236 flexible flat cable (50P)
VF-126 board
VF lens assembly
Cabinet (R) assembly

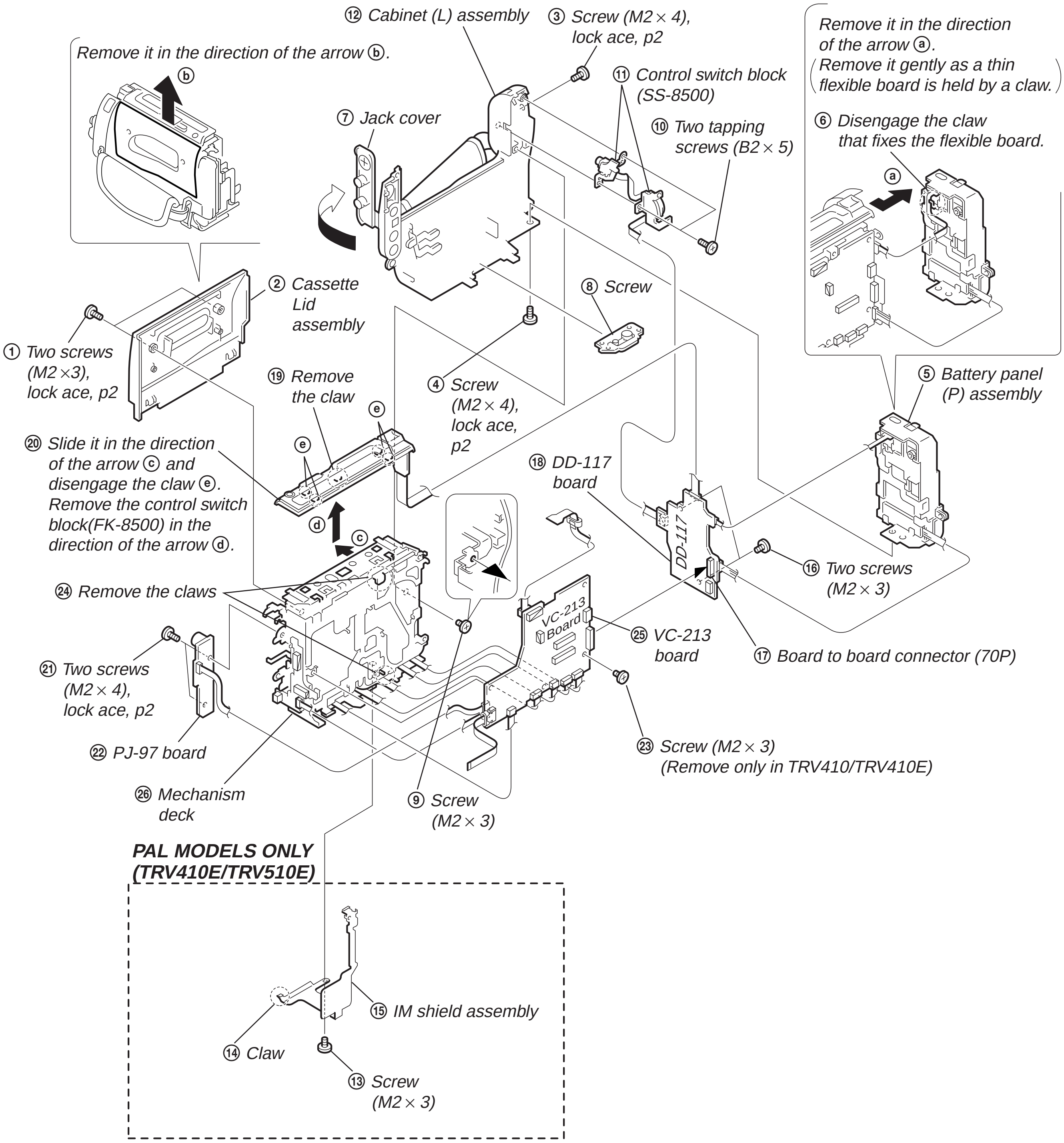
2-9. LENS BLOCK


⑨ Flexible board (from LENS block) (24P)
⑦ Screw (M2 × 3)
④ FP-54 flexible board (16P)
⑥ Screw (M2 × 3)
⑩ LENS block
VC-213 Board
① FFC-236 flexible flat cable (50P)
⑧ FP-45 flexible board (8P)
⑤ Screw (M2 × 3)
③ Cabinet (R) assembly
② DP-75 harness (10P)

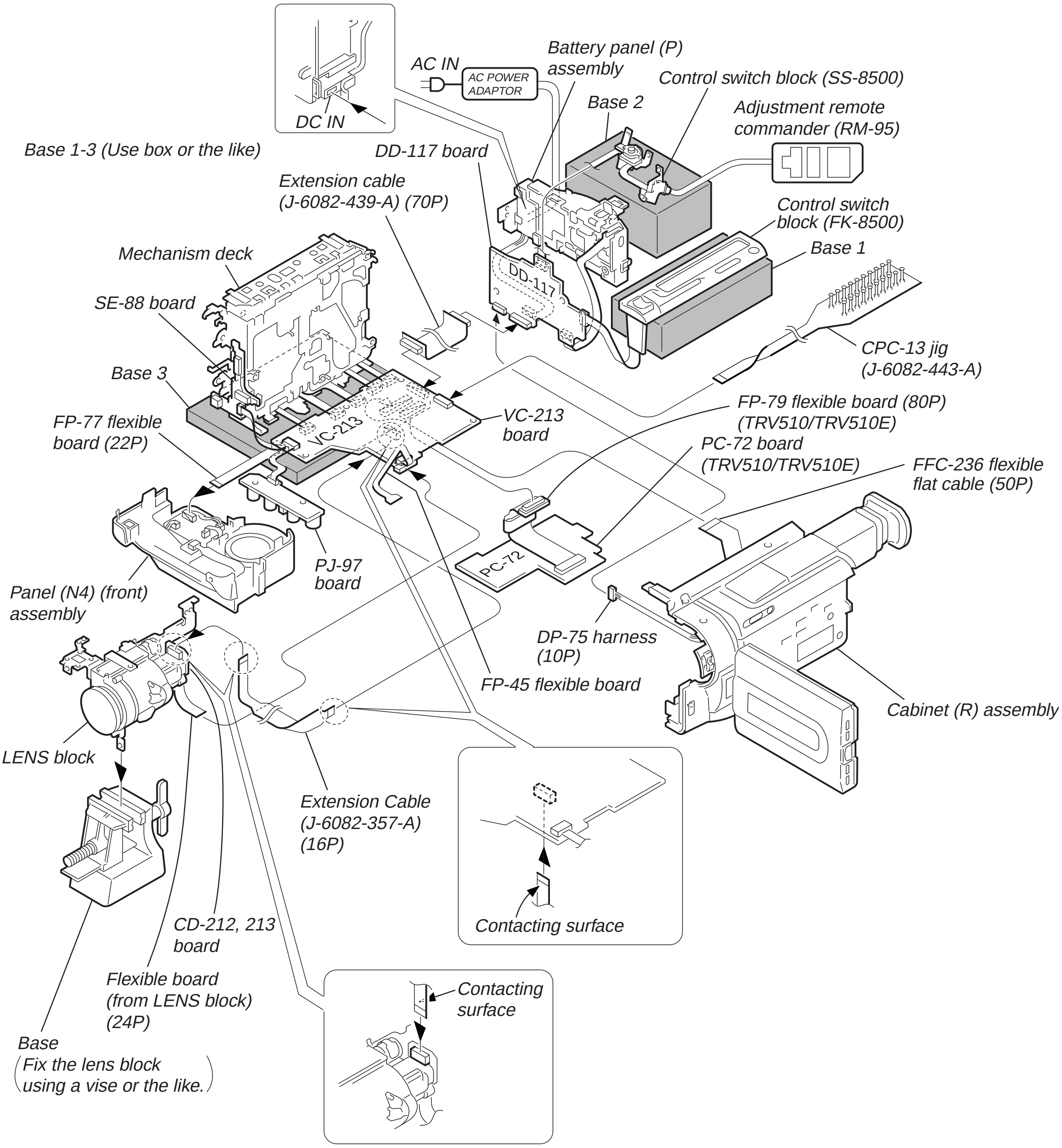
[LENS BLOCK CHECK SERVICE POSITION]


Adjustment remote commander (RM-95)
Flexible board (from LENS block) (24P)
LANC jack
CPC-13 jig (J-6082-443-A)
CPC-13 jig
Insulater side
DC IN
Extension cable (J-6082-357-A) (16P)
AC POWER ADAPTOR
AC IN
FP-79 flexible board (80P) (TRV510/TRV510E)
VC-213 Board
DP-75 harness (10P)
Base (Use box or the like.)
PC-72 board (TRV510/TRV510E)
LENS block
PC-72
FP-77 flexible board (22P)
FFC-236 flexible flat cable (50P)
Base (Use box or the like.)
Panel (N4) (front) assembly
Cabinet (R) assembly
Base (Fix the lens block using a vise or the like.)

2-10. MECHANISM DECK, VC-213, DD-117, PJ-97 BOARDS

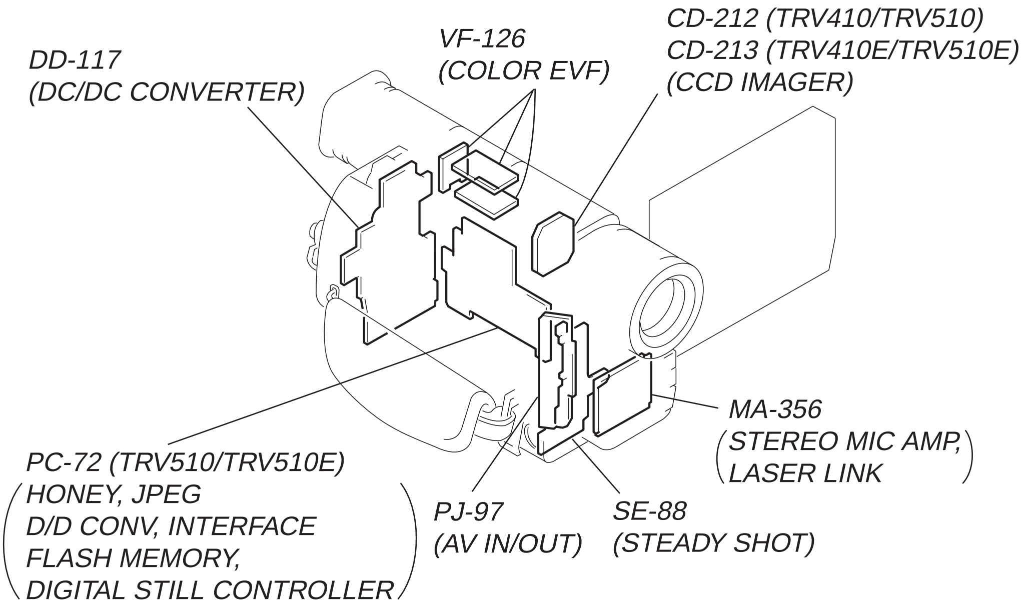

⑫ Cabinet (L) assembly
③ Screw (M2 × 4), lock ace, p2
Remove it in the direction of the arrow ⓐ. (Remove it gently as a thin flexible board is held by a claw.)
Remove it in the direction of the arrow ⓑ.
ⓑ
⑪ Control switch block (SS-8500)
⑦ Jack cover
⑩ Two tapping screws (B2 × 5)
⑥ Disengage the claw that fixes the flexible board.
ⓐ
② Cassette Lid assembly
⑧ Screw
① Two screws (M2 ×3), lock ace, p2
⑲ Remove the claw
④ Screw (M2 × 4), lock ace, p2
ⓔ
ⓔ
⑤ Battery panel (P) assembly
⑳ Slide it in the direction of the arrow ⓒ and disengage the claw ⓔ. Remove the control switch block(FK-8500) in the direction of the arrow ⓓ.
⑱ DD-117 board
DD-117
ⓓ
ⓒ
⑯ Two screws (M2 × 3)
㉔ Remove the claws
VC-213 Board
㉕ VC-213 board
⑰ Board to board connector (70P)
㉑ Two screws (M2 × 4), lock ace, p2
㉒ PJ-97 board
㉓ Screw (M2 × 3) (Remove only in TRV410/TRV410E)
㉖ Mechanism deck
⑨ Screw (M2 × 3)
PAL MODELS ONLY (TRV410E/TRV510E)
⑮ IM shield assembly
⑭ Claw
⑬ Screw (M2 × 3)

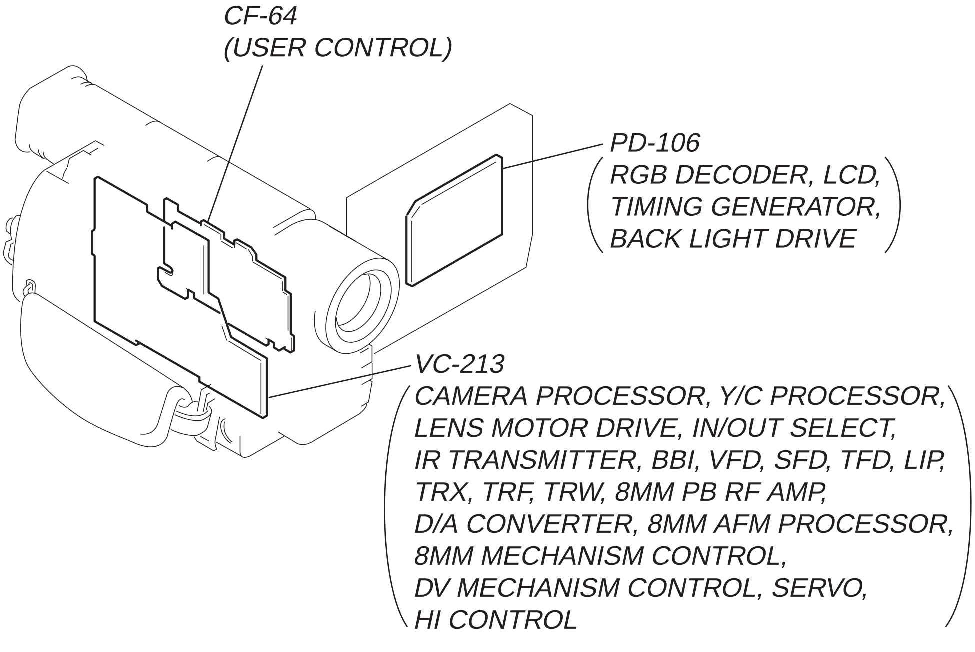
[MECHANISM DECK, VC-213, DD-117, PJ-97 BOARDS CHECK SERVICE POSITION]


AC IN
AC POWER ADAPTOR
DC IN
Battery panel (P) assembly
Control switch block (SS-8500)
Base 2
Adjustment remote commander (RM-95)
Base 1-3 (Use box or the like)
DD-117 board
Extension cable (J-6082-439-A) (70P)
Control switch block (FK-8500)
Base 1
Mechanism deck
DD-117
SE-88 board
CPC-13 jig (J-6082-443-A)
Base 3
FP-77 flexible board (22P)
VC-213
VC-213 board
FP-79 flexible board (80P) (TRV510/TRV510E)
PC-72 board (TRV510/TRV510E)
FFC-236 flexible flat cable (50P)
PC-72
PJ-97 board
Panel (N4) (front) assembly
DP-75 harness (10P)
FP-45 flexible board
Cabinet (R) assembly
LENS block
Extension Cable (J-6082-357-A) (16P)
Contacting surface
CD-212, 213 board
Flexible board (from LENS block) (24P)
Contacting surface
Base
Fix the lens block using a vise or the like.

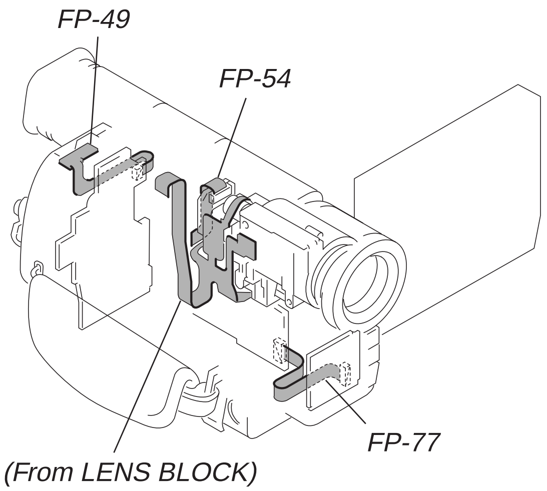
2-11. CIRCUIT BOARDS LOCATION

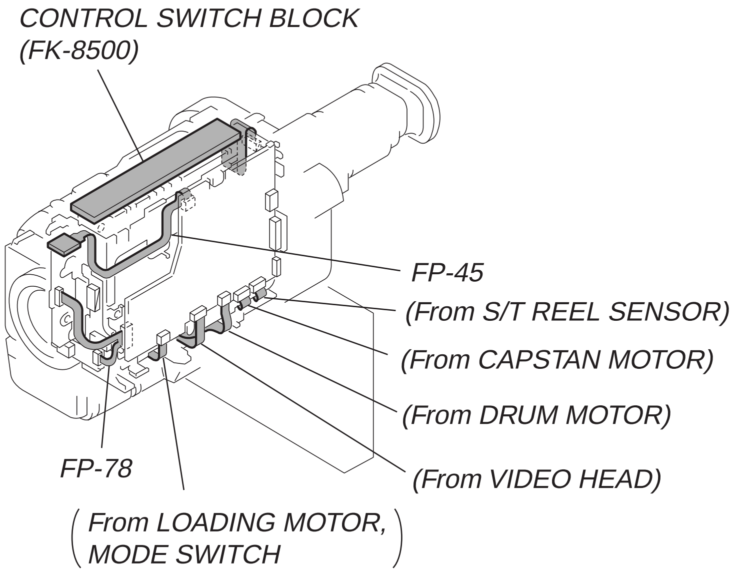
NOTE: For the difference of the printed wiring boards due to needs and destinations, refer to “Table for differences of function” on page 3.

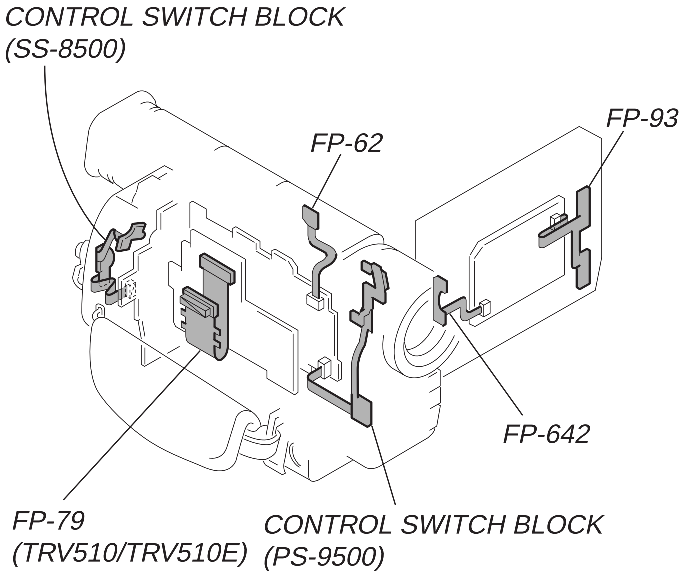

DD-117
(DC/DC CONVERTER)
VF-126
(COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
MA-356
(STEREO MIC AMP,
LASER LINK)
PC-72 (TRV510/TRV510E)
(HONEY, JPEG
D/D CONV, INTERFACE
FLASH MEMORY,
DIGITAL STILL CONTROLLER)
PJ-97
(AV IN/OUT)
SE-88
(STEADY SHOT)

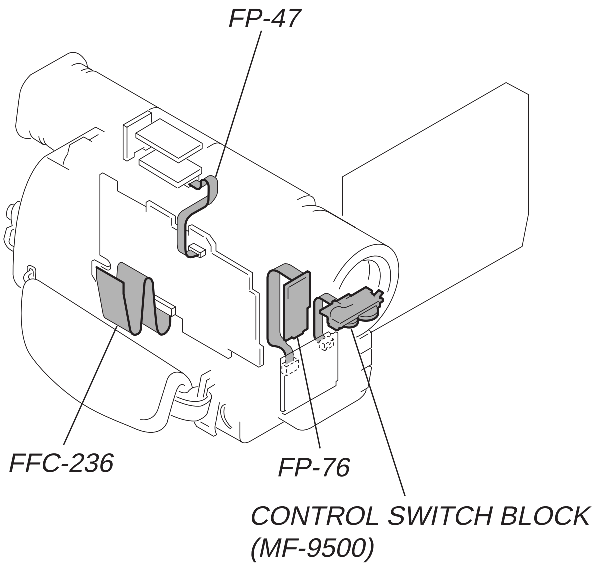

CF-64
(USER CONTROL)
PD-106
(RGB DECODER, LCD,
TIMING GENERATOR,
BACK LIGHT DRIVE)
VC-213
(CAMERA PROCESSOR, Y/C PROCESSOR,
LENS MOTOR DRIVE, IN/OUT SELECT,
IR TRANSMITTER, BBI, VFD, SFD, TFD, LIP,
TRX, TRF, TRW, 8MM PB RF AMP,
D/A CONVERTER, 8MM AFM PROCESSOR,
8MM MECHANISM CONTROL,
DV MECHANISM CONTROL, SERVO,
HI CONTROL)

2-12. FLEXIBLE BOARDS LOCATION


FP-49
FP-54
FP-77
(From LENS BLOCK)

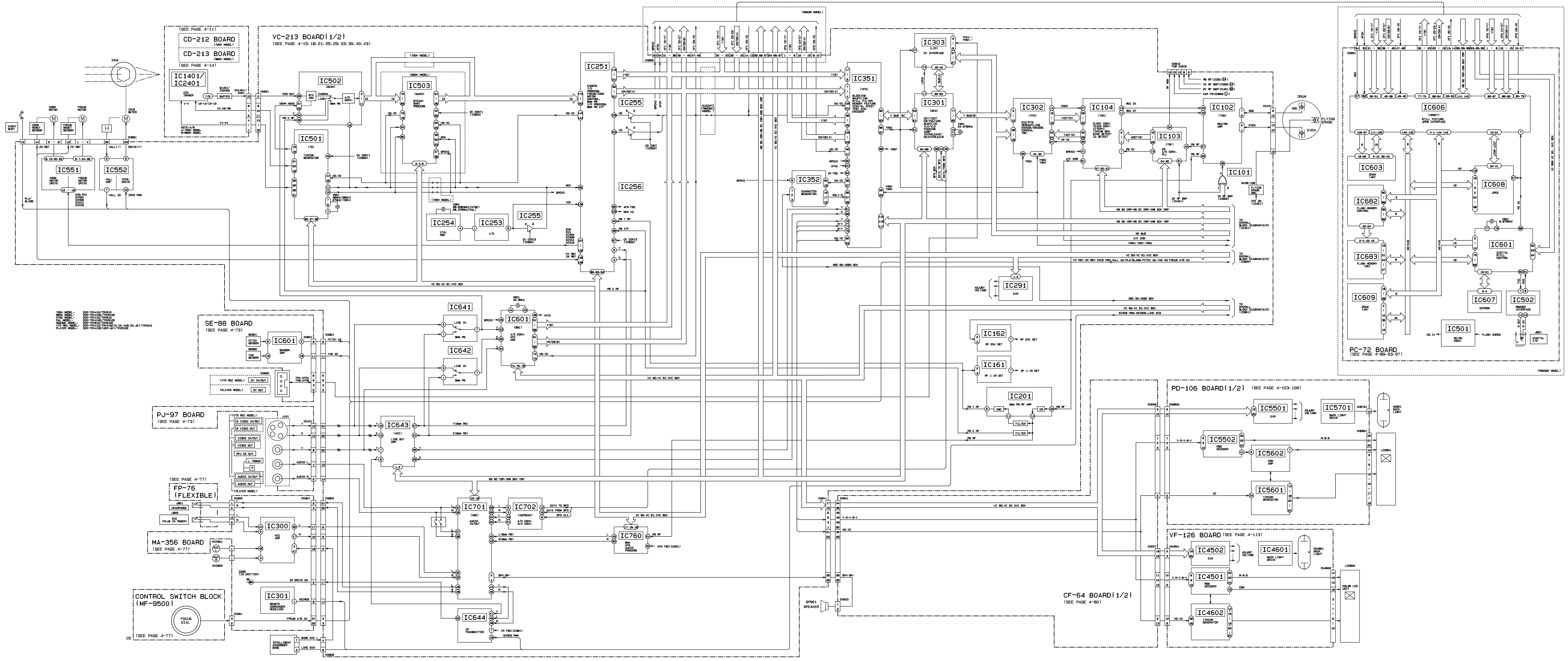

CONTROL SWITCH BLOCK
(FK-8500)
FP-45
(From S/T REEL SENSOR)
(From CAPSTAN MOTOR)
(From DRUM MOTOR)
(From VIDEO HEAD)
FP-78
(From LOADING MOTOR, MODE SWITCH)


CONTROL SWITCH BLOCK
(SS-8500)
FP-62
FP-93
FP-642
FP-79
(TRV510/TRV510E)
CONTROL SWITCH BLOCK
(PS-9500)

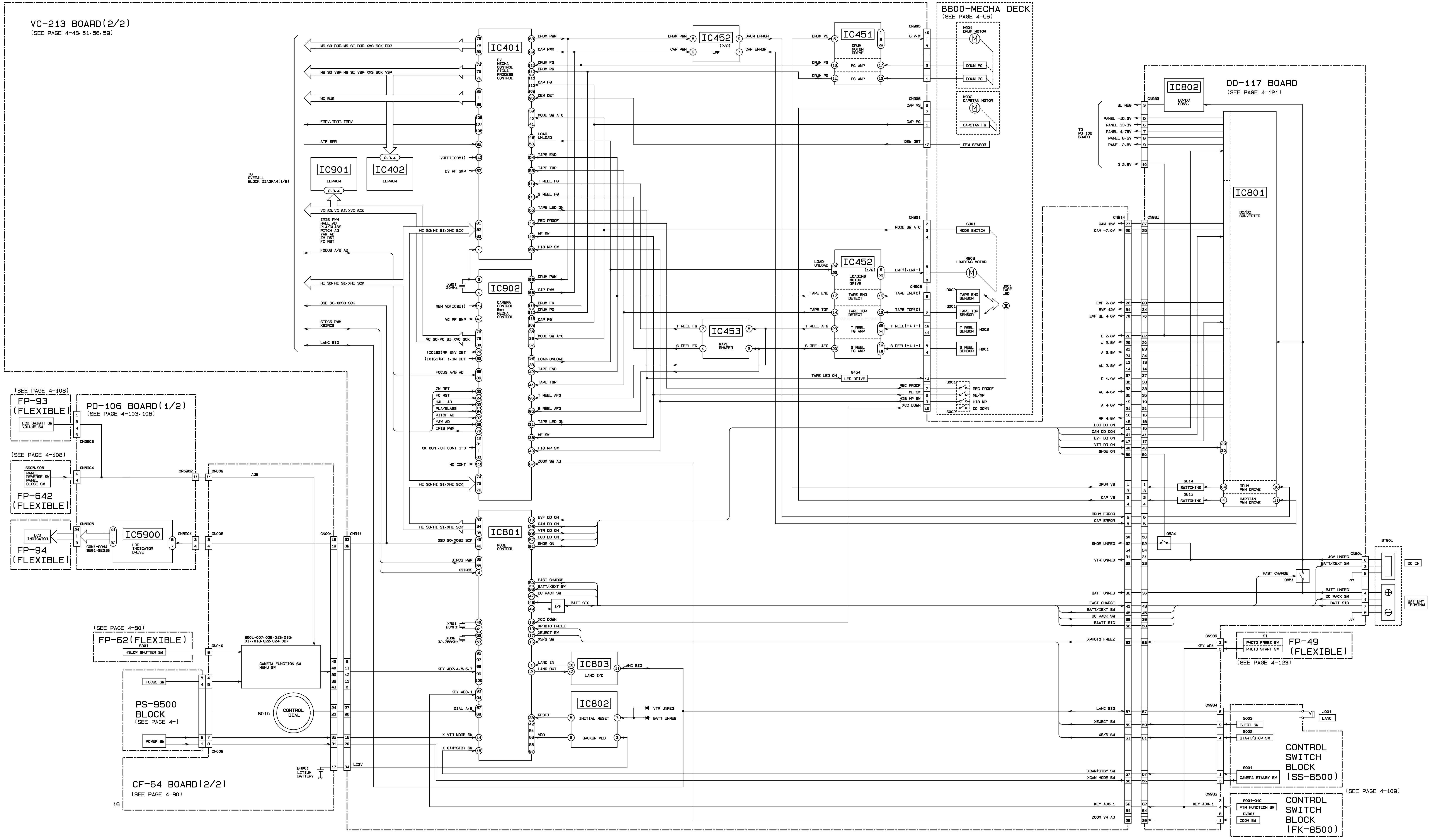

FP-47
FFC-236
FP-76
CONTROL SWITCH BLOCK
(MF-9500)

SECTION 3
BLOCK DIAGRAMS

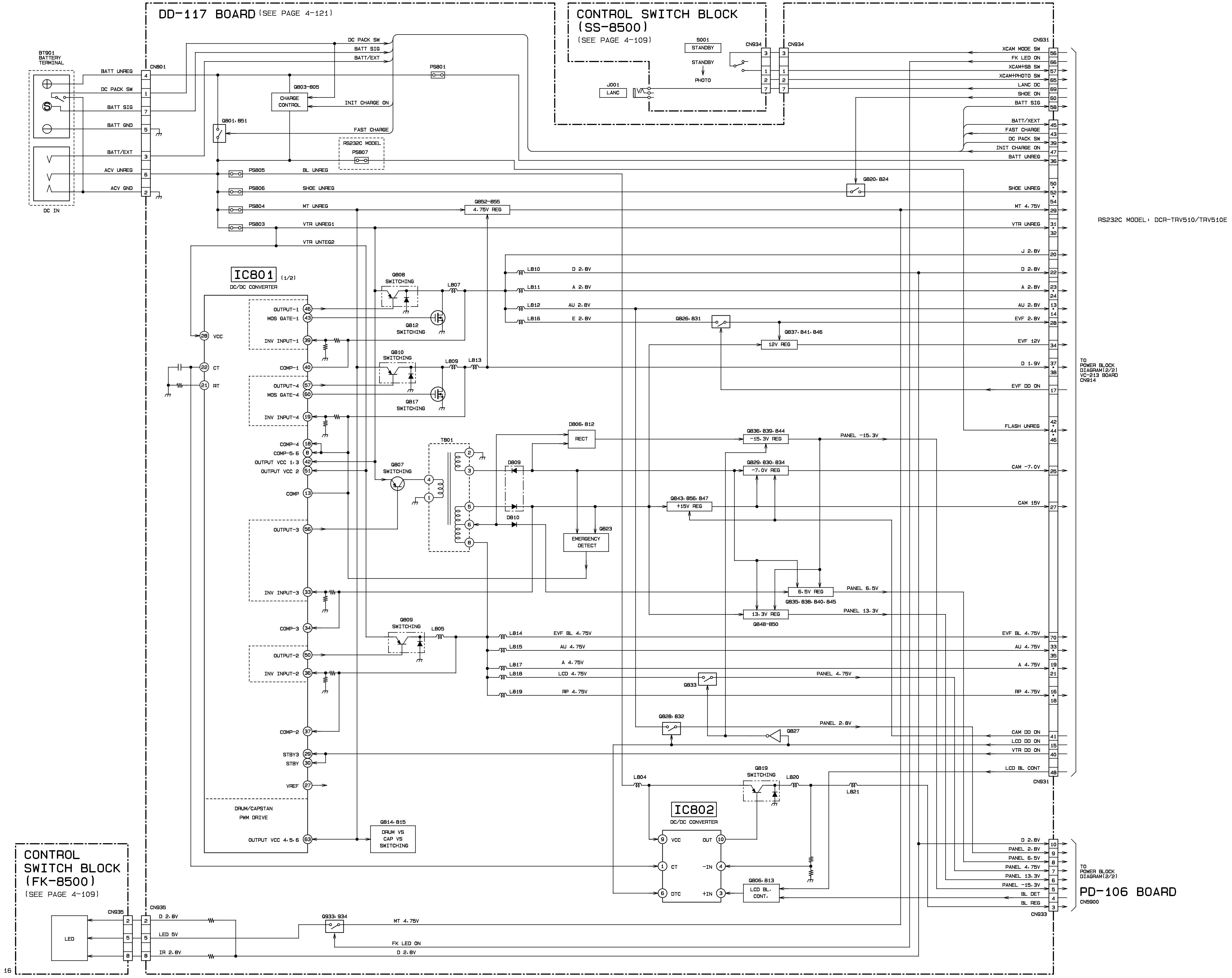
3-1. OVERALL BLOCK DIAGRAM (1)


CD-212 BOARD
CD-213 BOARD
IC1401/IC2401
VC-213 BOARD(1/2)
IC502
IC503
IC501
IC551
IC552
IC251
IC255
IC256
IC254
IC253
IC255
IC351
IC352
IC303
IC301
IC302
IC104
IC103
IC102
IC101
IC291
IC162
IC161
IC201
IC641
IC601
IC642
IC643
IC701
IC702
IC760
IC644
SE-88 BOARD
IC601
PJ-97 BOARD
FP-76 (FLEXIBLE)
IC300
MA-356 BOARD
IC301
CONTROL SWITCH BLOCK (MF-9500)
PC-72 BOARD
IC606
IC603
IC608
IC682
IC683
IC601
IC609
IC607
IC502
IC501
PD-106 BOARD(1/2)
IC5501
IC5701
IC5502
IC5602
IC5601
VF-126 BOARD
IC4502
IC4601
IC4501
IC4602
CF-64 BOARD(1/2)
DRUM
IRIS
ZOOM MOTOR
FOCUS MOTOR
IRIS METER
NIGHT SHOT
SP901 SPEAKER
FOCUS DIAL

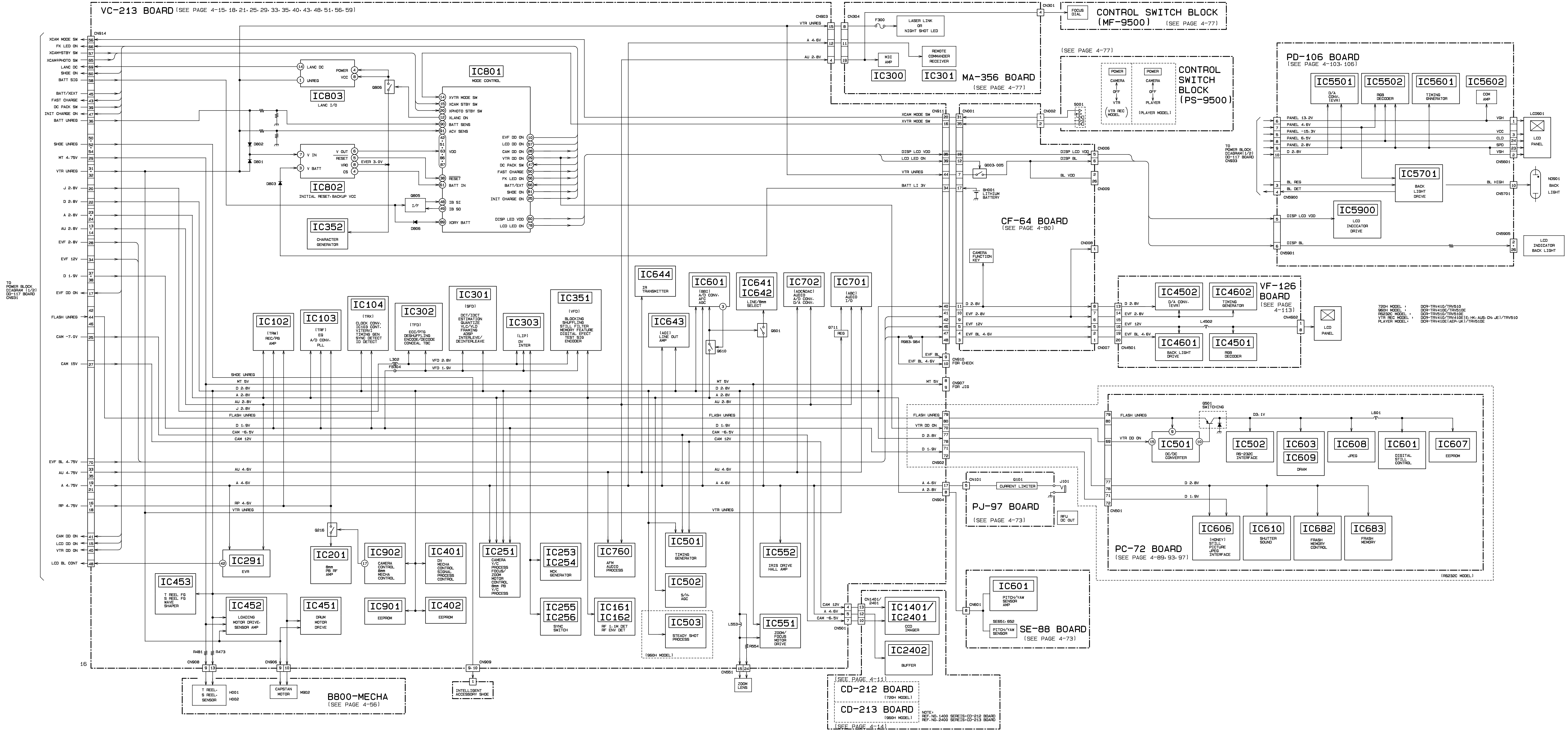
3-2. OVERALL BLOCK DIAGRAM (2)


VC-213 BOARD(2/2)
(SEE PAGE 4-48, 51, 56, 59)
IC401
DV MECHA CONTROL SIGNAL PROCESS CONTROL
IC901
EEPROM
IC402
EEPROM
IC902
CAMERA CONTROL MECHA CONTROL
IC801
MODE CONTROL
IC803
LANC I/O
IC802
INITIAL RESET
BACKUP VDD
IC452
LPF
IC451
DRUM MOTOR DRIVE
FG AMP
PG AMP
IC452
LOADING MOTOR DRIVE
TAPE END DETECT
TAPE TOP DETECT
T REEL FG AMP
S REEL FG AMP
IC453
WAVE SHAPER
TO OVERALL BLOCK DIAGRAM (1/2)
B800-MECHA DECK
(SEE PAGE 4-56)
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
DRUM FG
DRUM PG
CAPSTAN FG
DEW SENSOR
S901 MODE SWITCH
M903 LOADING MOTOR
TAPE END SENSOR
TAPE TOP SENSOR
T REEL SENSOR
S REEL SENSOR
D001 TAPE LED
LED DRIVE
REC PROOF
ME/MP
HI8 MP
CC DOWN
DD-117 BOARD
(SEE PAGE 4-121)
IC802
DC/DC CONV.
IC801
DC/DC CONVERTER
TO PD-106 BOARD
DRUM PWM DRIVE
CAPSTAN PWM DRIVE
Q814 SWITCHING
Q815 SWITCHING
BT901
DC IN
BATTERY TERMINAL
FAST CHARGE
(SEE PAGE 4-108)
FP-93 (FLEXIBLE)
LCD BRIGHT SW VOLUME SW
PD-106 BOARD(1/2)
(SEE PAGE 4-103, 106)
(SEE PAGE 4-108)
S905-906
PANEL REVERSE SW
PANEL CLOSE SW
FP-642 (FLEXIBLE)
LCD INDICATOR
FP-94 (FLEXIBLE)
IC5900
LCD INDICATOR DRIVE
COM1-COM4 SEG1-SEG18
(SEE PAGE 4-80)
FP-62(FLEXIBLE)
S001 HSLOW SHUTTER SW
S001-007, 009-013, 015-017, 018, 022-024, 027
CAMERA FUNCTION SW MENU SW
PS-9500 BLOCK
(SEE PAGE 4-)
FOCUS SW
S015
CONTROL DIAL
POWER SW
CF-64 BOARD(2/2)
(SEE PAGE 4-80)
BH001 LITHIUM BATTERY
S1
PHOTO FREEZ SW
PHOTO START SW
FP-49 (FLEXIBLE)
(SEE PAGE 4-123)
J001 LANC
S003 EJECT SW
S002 START/STOP SW
S001 CAMERA STANBY SW
CONTROL SWITCH BLOCK (SS-B500)
(SEE PAGE 4-109)
S001-010 VTR FUNCTION SW
RV001 ZOOM SW
CONTROL SWITCH BLOCK (FK-B500)

3-3. POWER BLOCK DIAGRAM (1)


DD-117 BOARD (SEE PAGE 4-121)
CONTROL SWITCH BLOCK (SS-8500) (SEE PAGE 4-109)
CONTROL SWITCH BLOCK (FK-8500) (SEE PAGE 4-109)
BT901 BATTERY TERMINAL
DC IN
CN801
BATT UNREG
DC PACK SW
BATT SIG
BATT GND
BATT/EXT
ACV UNREG
ACV GND
Q803-805 CHARGE CONTROL
INIT CHARGE ON
FAST CHARGE
Q801, 851
PS801
RS232C MODEL PS807
PS805 BL UNREG
PS806 SHOE UNREG
PS804 MT UNREG
PS803 VTR UNREG1
VTR UNTEG2
Q852-855 4.75V REG
S001 STANDBY
STANDBY ↓ PHOTO
J001 LANC
CN934
CN931
XCAM MODE SW
FK LED ON
XCAM+SB SW
XCAM+PHOTO SW
LANC DC
SHOE ON
BATT/XEXT
Q820, 824
SHOE UNREG
MT 4.75V
VTR UNREG
RS232C MODEL: DCR-TRV510/TRV510E
J 2.8V
L810 D 2.8V
L811 A 2.8V
L812 AU 2.8V
L816 E 2.8V
EVF 2.8V
Q826, 831
Q837, 841, 846 12V REG
EVF 12V
D 1.9V
EVF DD ON
FLASH UNREG
TO POWER BLOCK DIAGRAM(2/2) VC-213 BOARD CN914
IC801 (1/2) DC/DC CONVERTER
OUTPUT-1
MOS GATE-1
INV INPUT-1
VCC
CT
RT
COMP-1
OUTPUT-4
MOS GATE-4
INV INPUT-4
COMP-4
COMP-5, 6
OUTPUT VCC 1, 3
OUTPUT VCC 2
COMP
OUTPUT-3
INV INPUT-3
COMP-3
OUTPUT-2
INV INPUT-2
COMP-2
STBY3
STBY
VREF
DRUM/CAPSTAN PWM DRIVE
OUTPUT VCC 4, 5, 6
Q814, 815 DRUM VS CAP VS SWITCHING
Q808 SWITCHING
Q812 SWITCHING
L807
Q810 SWITCHING
Q817 SWITCHING
L809
L813
T801
Q807 SWITCHING
D809
D810
D806, 812 RECT
Q823
EMERGENCY DETECT
Q836, 839, 844 -15.3V REG
PANEL -15.3V
Q829, 830, 834 -7.0V REG
CAM -7.0V
Q843, 856, 847 +15V REG
CAM 15V
6.5V REG
Q835, 838, 840, 845
PANEL 6.5V
13.3V REG
Q848-850
PANEL 13.3V
Q809 SWITCHING
L805
L814 EVF BL 4.75V
L815 AU 4.75V
L817 A 4.75V
L818 LCD 4.75V
L819 RP 4.75V
Q833
PANEL 4.75V
Q828, 832
PANEL 2.8V
Q827
CAM DD ON
LCD DD ON
VTR DD ON
LCD BL CONT
L804
Q819 SWITCHING
L820
L821
IC802 DC/DC CONVERTER
VCC
OUT
CT
-IN
DTC
+IN
Q806, 813 LCD BL. CONT.
CN933
D 2.8V
PANEL 2.8V
PANEL 6.5V
PANEL 4.75V
PANEL 13.3V
PANEL -15.3V
BL DET
BL REG
TO POWER BLOCK DIAGRAM(2/2)
PD-106 BOARD CN5900
CN935
LED
D 2.8V
LED 5V
IR 2.8V
Q933, 934
MT 4.75V
FK LED ON
16

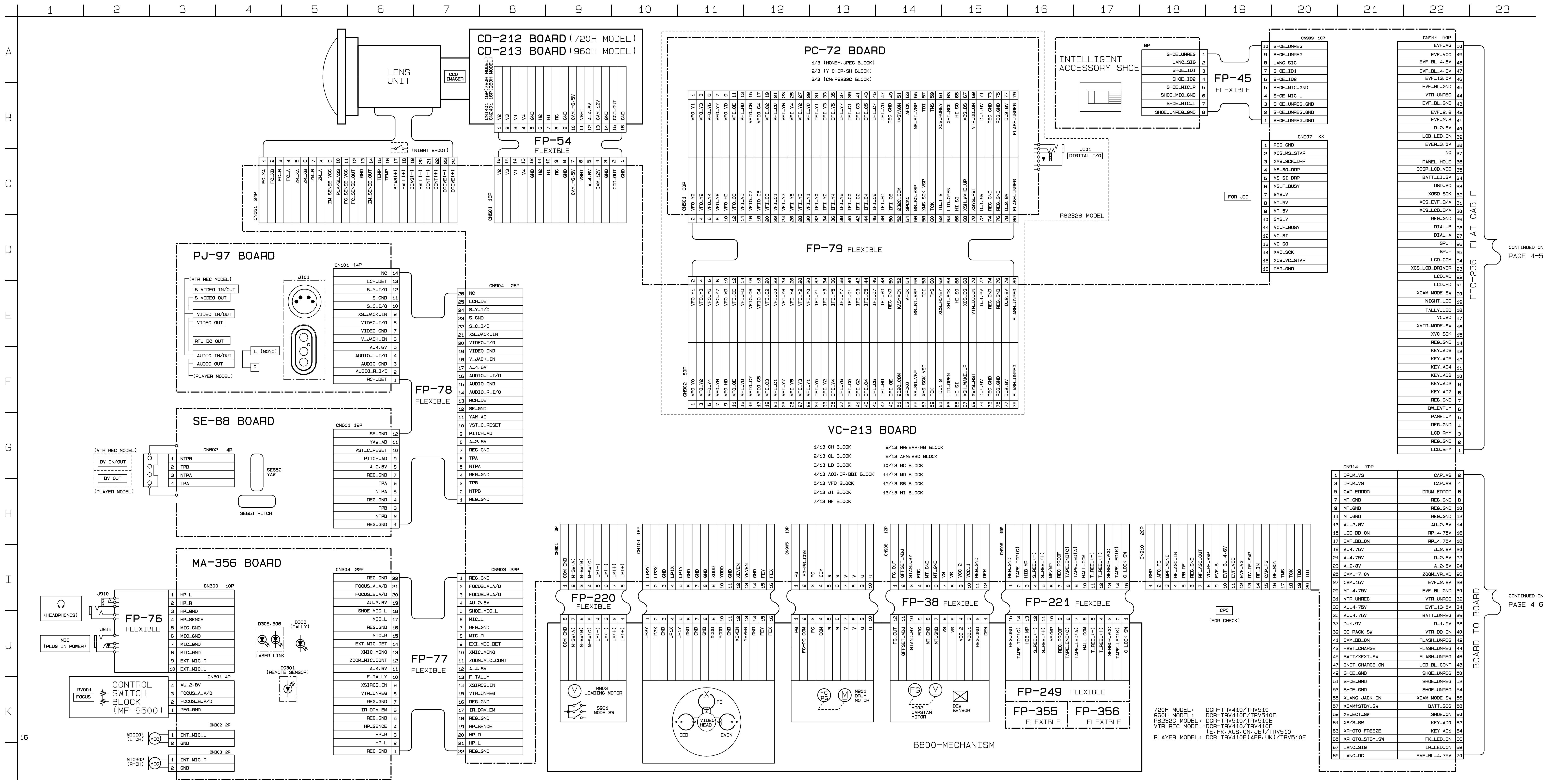
3-4. POWER BLOCK DIAGRAM (2)



VC-213 BOARD (SEE PAGE 4-15, 18, 21, 25, 29, 33, 35, 40, 43, 48, 51, 56, 59)
CN914
XCAM MODE SW
FK LED ON
XCAM+STBY SW
XCAM+PHOTO SW
LANC DC
SHOE ON
BATT SIG
BATT/XEXT
FAST CHARGE
DC PACK SW
INIT CHARGE ON
BATT UNREG
SHOE UNREG
MT 4.75V
VTR UNREG
J 2.8V
D 2.8V
A 2.8V
AU 2.8V
EVF 2.8V
EVF 12V
D 1.9V
EVF DD ON
FLASH UNREG
CAM -7.0V
CAM 15V
EVF BL 4.75V
AU 4.75V
A 4.75V
RP 4.75V
CAM DD ON
LCD DD ON
VTR DD ON
LCD BL CONT
TO POWER BLOCK DIAGRAM (1/2) DD-117 BOARD CN931
IC801 MODE CONTROL
IC803 LANC I/O
IC802 INITIAL RESET, BACKUP VCC
IC352 CHARACTER GENERATOR
IC102 (TRW) REC/PB AMP
IC103 (TRF) EQ A/D CONV. PLL
IC104 (TRX) CLOCK CONV. IC103 CONT. VITERVI TIMING GEN SYNC DETECT ID DETECT
IC302 (TFD) ECC/PTG DESHUFFLING ENCODE/DECODE CONCEAL TBC
IC301 (SFD) DCT/IDCT ESTIMATION QUANTIZE VLC/VLD FRAMING ADSP INTERLEAVE/DEINTERLEAVE
IC303 (LIP) DV INTER
IC351 (VFD) BLOCKING SHUFFLING STILL FILTER MEMORY FEATURE DIGITAL EFECT TEST SIG ENCODER
IC644 IR TRANSMITTER
IC643 (ADI) LINE OUT AMP
IC601 (SBI) A/D CONV. AFC AGC
IC641 IC642 LINE/8mm SELECT
IC702 (ADC/DAC) AUDIO A/D CONV. D/A CONV.
IC701 (ABC) AUDIO I/O
IC291 EVR
IC453 T REEL FG S REEL FG WAVE SHAPER
IC452 LOADING MOTOR DRIVE, SENSOR AMP
IC451 DRUM MOTOR DRIVE
IC201 8mm PB RF AMP
IC902 CAMERA CONTROL 8mm MECHA CONTROL
IC401 DV MECHA CONTROL SIGNAL PROCESS CONTROL
IC901 EEPROM
IC402 EEPROM
IC251 CAMERA Y/C PROCESS FOCUS/ZOOM MOTOR CONTROL 8mm PB Y/C PROCESS
IC253 IC254 MCK GENERATOR
IC255 IC256 SYNC SWITCH
IC760 AFM AUDIO PROCESS
IC161 IC162 RF 1.1M DET RF ENV DET
IC501 TIMING GENERATOR
IC502 S/H, AGC
IC503 STEADY SHOT PROCESS
(960H MODEL)
IC552 IRIS DRIVE HALL AMP
IC551 ZOOM/FOCUS MOTOR DRIVE
B800-MECHA (SEE PAGE 4-56)
T REEL, S REEL SENSOR
CAPSTAN MOTOR
INTELLIGENT ACCESSORY SHOE
ZOOM LENS
CONTROL SWITCH BLOCK (MF-9500) (SEE PAGE 4-77)
FOCUS DIAL
MA-356 BOARD (SEE PAGE 4-77)
LASER LINK OR NIGHT SHOT LED
REMOTE COMMANDER RECEIVER
IC300 MIC AMP
IC301
CONTROL SWITCH BLOCK (PS-9500) (SEE PAGE 4-77)
POWER CAMERA OFF VTR (VTR REC MODEL)
POWER CAMERA OFF PLAYER (PLAYER MODEL)
CF-64 BOARD (SEE PAGE 4-80)
BH001 LITHIUM BATTERY
CAMERA FUNCTION KEY
FOR CHECK
FOR JIG
PD-106 BOARD (SEE PAGE 4-103, 106)
IC5501 D/A CONV. (EVR)
IC5502 RGB DECODER
IC5601 TIMING GNNERATOR
IC5602 COM AMP
IC5701 BACK LIGHT DRIVE
IC5900 LCD INDICATOR DRIVE
LCD PANEL
ND901 BACK LIGHT
LCD INDICATOR BACK LIGHT
TO POWER BLOCK DIAGRAM (1/2) DD-117 BOARD CN933
VF-126 BOARD (SEE PAGE 4-113)
IC4502 D/A CONV. (EVR)
IC4602 TIMING GENERATOR
IC4601 BACK LIGHT DRIVE
IC4501 RGB DECODER
LCD PANEL
720H MODEL : DCR-TRV410/TRV510
960H MODEL : DCR-TRV410E/TRV510E
RS232C MODEL : DCR-TRV510/TRV510E
VTR REC MODEL : DCR-TRV410/TRV410E(E, HK, AUS, CN, JE)/TRV510
PLAYER MODEL: DCR-TRV410E(AEP, UK)/TRV510E
PC-72 BOARD (SEE PAGE 4-89, 93, 97)
Q501 SWITCHING
IC501 DC/DC CONVERTER
IC502 RS-232C INTERFACE
IC603 IC609 DRAM
IC608 JPEG
IC601 DIGITAL STILL CONTROL
IC607 EEPROM
IC606 (HONEY) STILL PICTURE JPEG INTERFACE
IC610 SHUTTER SOUND
IC682 FRASH MEMORY CONTROL
IC683 FRASH MEMORY
(RS232C MODEL)
PJ-97 BOARD (SEE PAGE 4-73)
Q101 CURRENT LIMITER
RFU DC OUT
SE-88 BOARD (SEE PAGE 4-73)
IC601 PITCH/YAW SENSOR AMP
SE651, 652 PITCH/YAW SENSOR
IC1401/IC2401 CCD IMAGER
IC2402 BUFFER
CD-212 BOARD (720H MODEL)
CD-213 BOARD (960H MODEL)
(SEE PAGE 4-11)
(SEE PAGE 4-14)
NOTE: REF. NO. 1400 SEREIS: CD-212 BOARD REF. NO. 2400 SEREIS: CD-213 BOARD

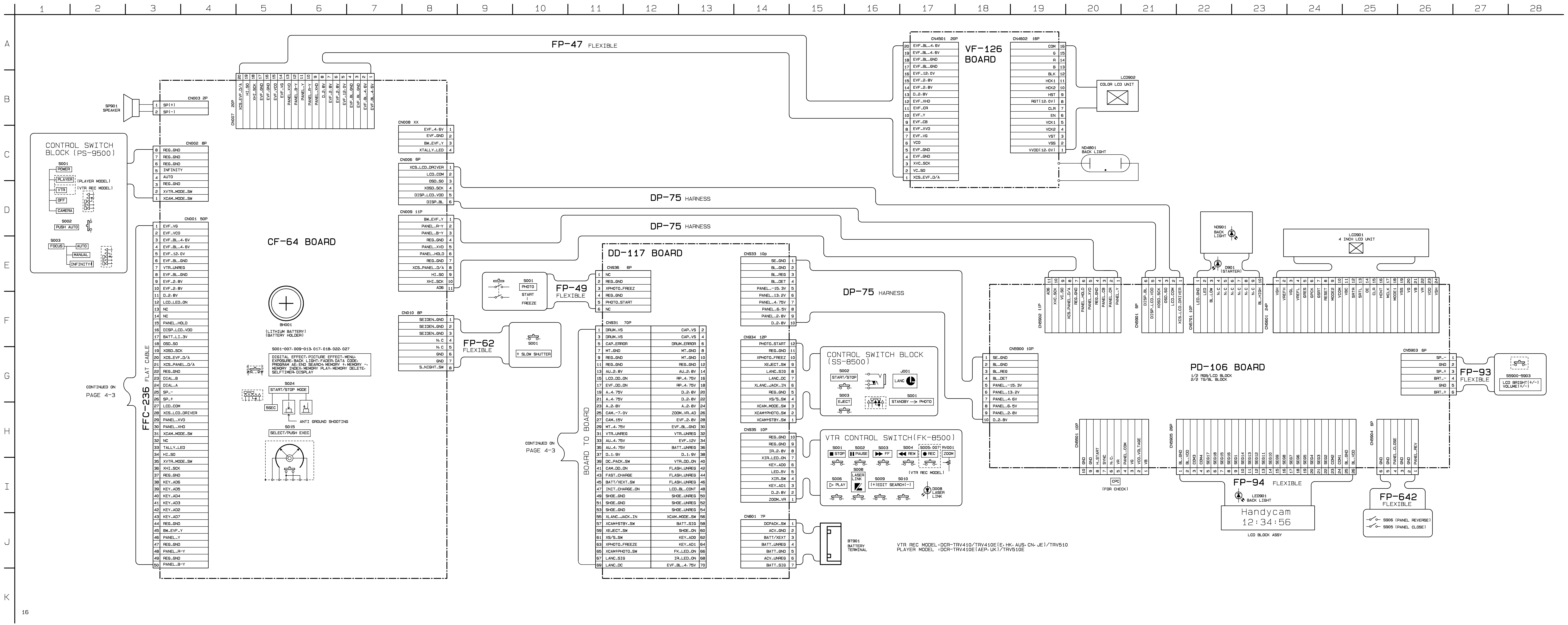
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM-1


CD-212 BOARD (720H MODEL)
CD-213 BOARD (960H MODEL)
LENS UNIT
CCD IMAGER
FP-54 FLEXIBLE
(NIGHT SHOOT)
PC-72 BOARD
1/3 (HONEY-JPEG BLOCK)
2/3 (Y CHIP-SH BLOCK)
3/3 (CN-RS232C BLOCK)
FP-79 FLEXIBLE
J501 DIGITAL I/O
RS232C MODEL
INTELLIGENT ACCESSORY SHOE
FP-45 FLEXIBLE
FOR JIG
PJ-97 BOARD
FP-78 FLEXIBLE
SE-88 BOARD
SE952 YAW
SE951 PITCH
MA-356 BOARD
FP-76 FLEXIBLE
FP-77 FLEXIBLE
CONTROL SWITCH BLOCK (MF-9500)
LASER LINK
REMOTE SENSOR
VC-213 BOARD
1/13 CH BLOCK
2/13 CL BLOCK
3/13 LD BLOCK
4/13 AOI, IR, BBI BLOCK
5/13 VFD BLOCK
6/13 J1 BLOCK
7/13 RF BLOCK
8/13 RR, EVR, HB BLOCK
9/13 AFM, ABC BLOCK
10/13 MC BLOCK
11/13 MD BLOCK
12/13 SB BLOCK
13/13 HI BLOCK
FP-220 FLEXIBLE
FP-38 FLEXIBLE
FP-221 FLEXIBLE
FP-249 FLEXIBLE
FP-355 FLEXIBLE
FP-356 FLEXIBLE
CPC (FOR CHECK)
M903 LOADING MOTOR
S901 MODE SW
VIDEO HEAD
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
DEW SENSOR
B800-MECHANISM
FFC-236 FLAT CABLE
BOARD TO BOARD
CONTINUED ON PAGE 4-5
CONTINUED ON PAGE 4-6
720H MODEL: DCR-TRV410/TRV510
960H MODEL: DCR-TRV410E/TRV510E
RS232C MODEL: DCR-TRV510/TRV510E
VTR REC MODEL: DCR-TRV410/TRV410E (E, HK, AUS, CN, JE)/TRV510
PLAYER MODEL: DCR-TRV410E(AEP, UK)/TRV510E

FRAME SCHEMATIC DIAGRAM (1/2)

FRAME SCHEMATIC DIAGRAM-2

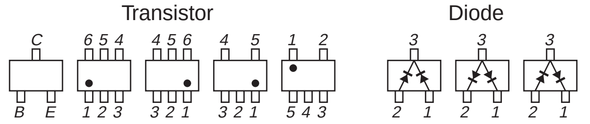

CF-64 BOARD
DD-117 BOARD
VF-126 BOARD
PD-106 BOARD
FP-47 FLEXIBLE
DP-75 HARNESS
DP-75 HARNESS
DP-75 HARNESS
FP-49 FLEXIBLE
FP-62 FLEXIBLE
FP-93 FLEXIBLE
FP-94 FLEXIBLE
FP-642 FLEXIBLE
FFC-236 FLAT CABLE
BOARD TO BOARD
CONTROL SWITCH BLOCK (PS-9500)
CONTROL SWITCH BLOCK (SS-8500)
VTR CONTROL SWITCH (FK-8500)
CONTINUED ON PAGE 4-3
CONTINUED ON PAGE 4-3
COLOR LCD UNIT
4 INCH LCD UNIT
Handycam 12:34:56
LCD BLOCK ASSY
VTR REC MODEL:DCR-TRV410/TRV410E(E,HK,AUS,CN,JE)/TRV510
PLAYER MODEL :DCR-TRV410E(AEP,UK)/TRV510E
16

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

- ░░░░░: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.


Transistor
Diode
C
6 5 4
4 5 6
4 5
1 2
3
3
3
B E
1 2 3
3 2 1
3 2 1
5 4 3
2 1
2 1
2 1

(For schematic diagrams)

- All capacitors are in µF unless otherwise noted. pF : µµF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted. kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520

Kinds of capacitor

Temperature characteristics

External dimensions (mm)

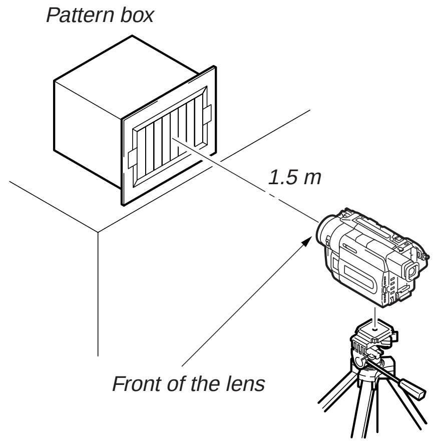
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination.
  Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- ─[▭]─ : non flammable resistor
- ─∿─ : fusible resistor
- ▭ : panel designation
- ━━ : B+ Line
- ╍╍ : B– Line
- ⇨ : IN/OUT direction of (+,–) B LINE.
- ▭ : adjustment for repair.
- Circled numbers refer to waveforms.

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.)

1. Connection


Pattern box
1.5 m
Front of the lens

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

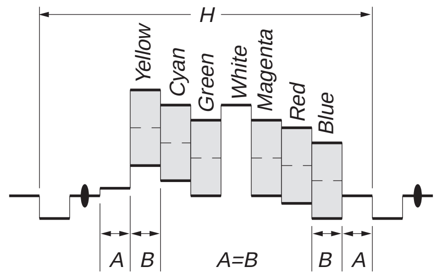

H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
A=B
B
A

Fig. a (Video output terminal output waveform)

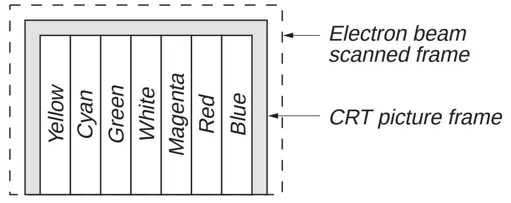
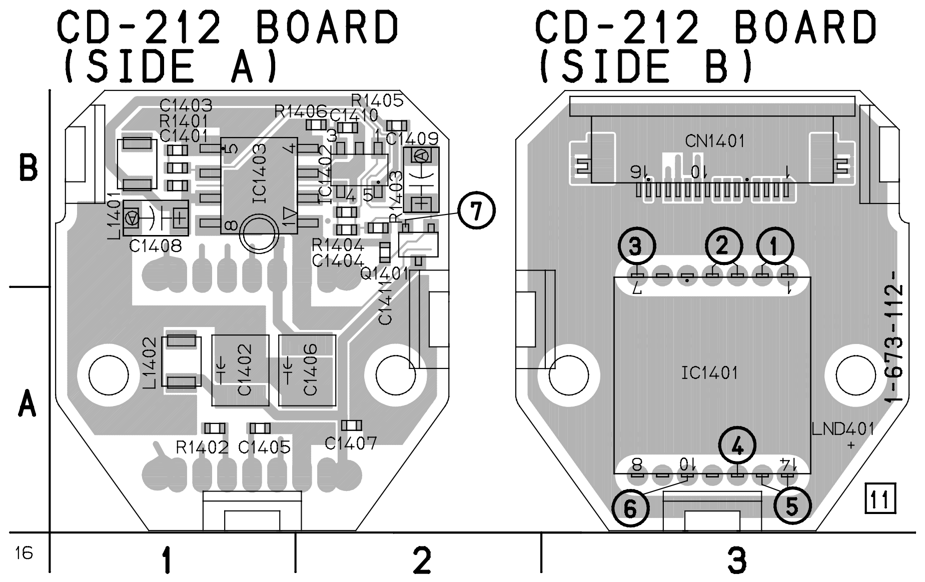

Yellow
Cyan
Green
White
Magenta
Red
Blue
Electron beam scanned frame
CRT picture frame

Fig.b (Picture on monitor TV)

When indicating parts by reference number, pleas include the board name.

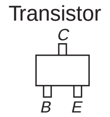
CD-212 (CCD IMAGER) PRINTED WIRING BOARD (720H MODEL)

— Ref. No. CD-212 Board; 10,000 Series —

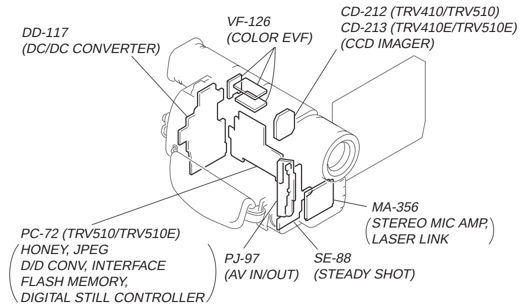

CD-212 BOARD (SIDE A)
CD-212 BOARD (SIDE B)
B
A
C1403
R1401
C1401
R1406
C1410
R1405
C1409
IC1403
C1411
L1401
C1408
R1404
C1404
Q1401
L1402
C1402
C1406
R1402
C1405
C1407
7
CN1401
16
1
3
2
1
IC1401
4
8
LND401
6
5
1-673-112-
11
16
1
2
3

For printed wiring boards

- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
- Chip parts

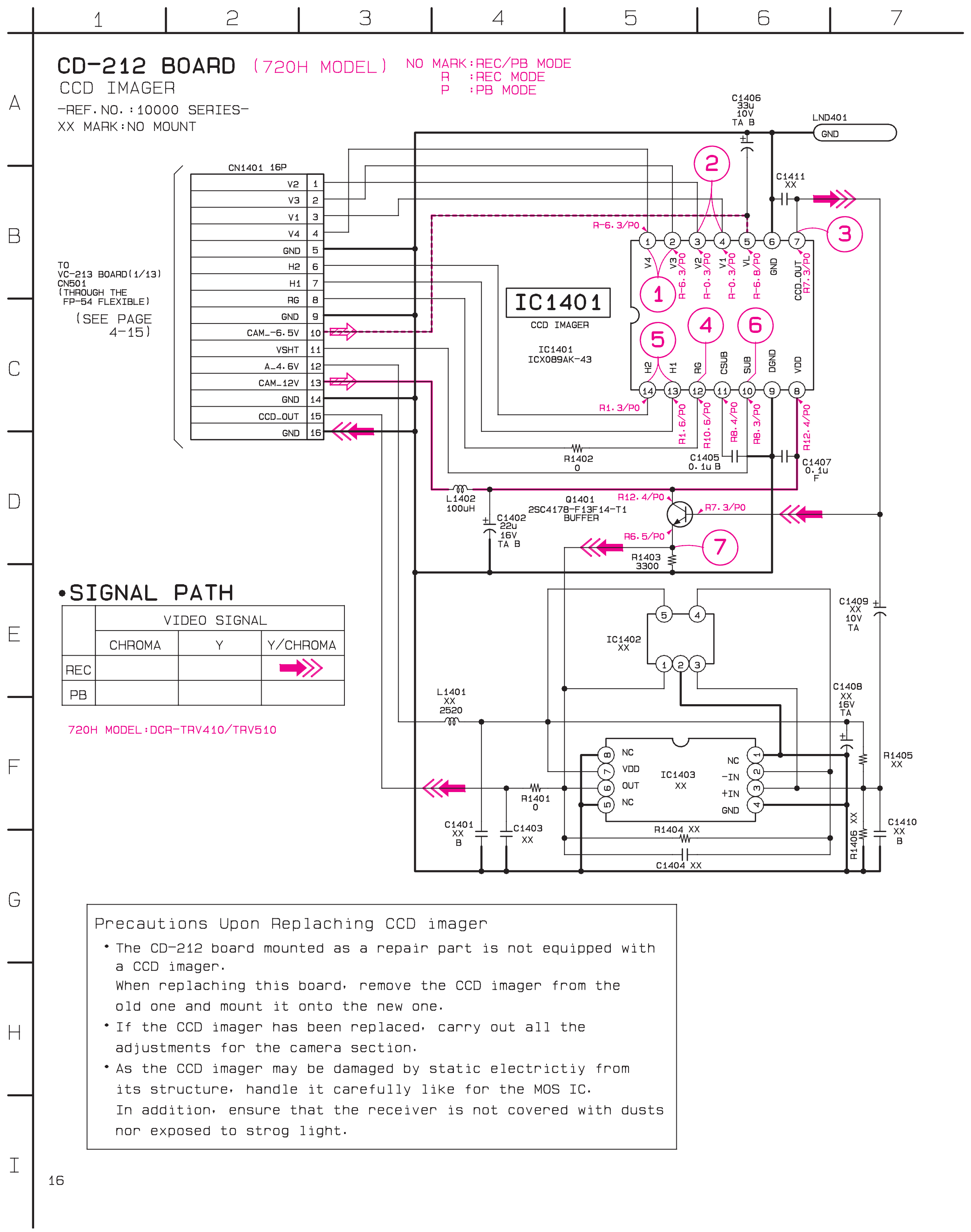

Transistor
C
B
E

There are few cases that the part printed on this diagram isn't mounted in this model.


DD-117
(DC/DC CONVERTER)
VF-126
(COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
PC-72 (TRV510/TRV510E)
HONEY, JPEG
D/D CONV, INTERFACE
FLASH MEMORY,
DIGITAL STILL CONTROLLER
PJ-97
(AV IN/OUT)
SE-88
(STEADY SHOT)
MA-356
STEREO MIC AMP,
LASER LINK

CD-212 BOARD

C1401	B-1
C1402	A-1
C1403	B-1
C1404	B-2
C1405	A-1
C1406	A-1
C1407	A-2
C1408	B-1
C1409	B-2
C1410	B-2
C1411	B-2
CN1401	B-3
IC1401	A-3
IC1402	B-2
IC1403	B-1
L1401	B-1
L1402	A-1
Q1401	B-2
R1401	B-1
R1402	A-1
R1403	B-2
R1404	B-2
R1405	B-2
R1406	B-2
R1408	B-2


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
CD-212 BOARD (720H MODEL)
CCD IMAGER
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
C1406 33u 10V TA B
LND401 GND
CN1401 16P
V2
V3
V1
V4
GND
H2
H1
RG
GND
CAM_-6.5V
VSHT
A_4.6V
CAM_12V
GND
CCD_OUT
GND
TO VC-213 BOARD(1/13) CN501 (THROUGH THE FP-54 FLEXIBLE)
(SEE PAGE 4-15)
C1411 XX
R-6.3/P0
IC1401
CCD IMAGER
IC1401 ICX089AK-43
V4
V3
V2
V1
VL
GND
CCD_OUT
H2
H1
RG
CSUB
SUB
DGND
VDD
R-6.3/P0
R-0.3/P0
R-0.3/P0
R-6.8/P0
R7.3/P0
R1.3/P0
R1.6/P0
R10.6/P0
R8.4/P0
R8.3/P0
R12.4/P0
R1402 0
C1405 0.1u B
C1407 0.1u F
L1402 100uH
C1402 22u 16V TA B
Q1401 2SC4178-F13F14-T1 BUFFER
R12.4/P0
R7.3/P0
R6.5/P0
R1403 3300
IC1402 XX
C1409 XX 10V TA
L1401 XX 2520
C1408 XX 16V TA
R1405 XX
NC
VDD
OUT
NC
IC1403 XX
NC
-IN
+IN
GND
R1401 0
C1401 XX B
C1403 XX
R1404 XX
C1404 XX
R1406 XX
C1410 XX B
16

•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡
PB			

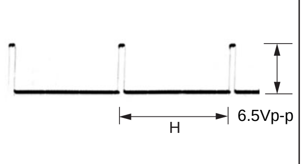
720H MODEL:DCR-TRV410/TRV510

Precautions Upon Replaching CCD imager

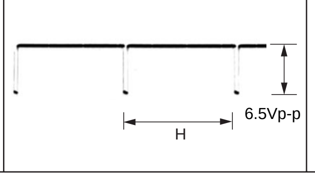
- The CD-212 board mounted as a repair part is not equipped with a CCD imager.
  When replaching this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electrictiy from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strog light.

CD-212 BOARD
CAMERA REC

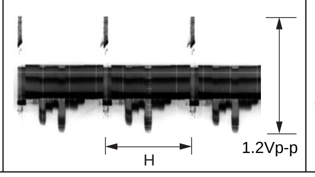
① IC1401 ①,②



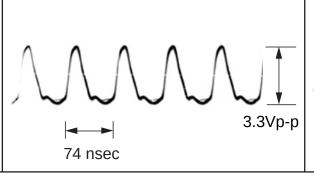
② IC1401 ③,④



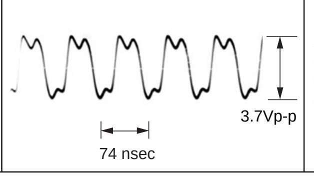
③ IC1401 ⑦



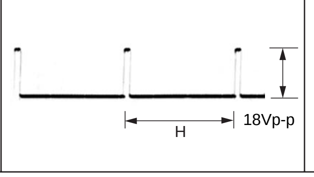
④ IC1401 ⑫



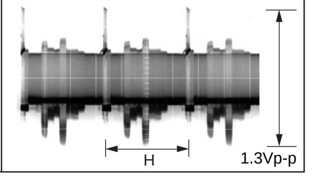
⑤ IC1401 ⑬,⑭



⑥ IC1401 ⑩

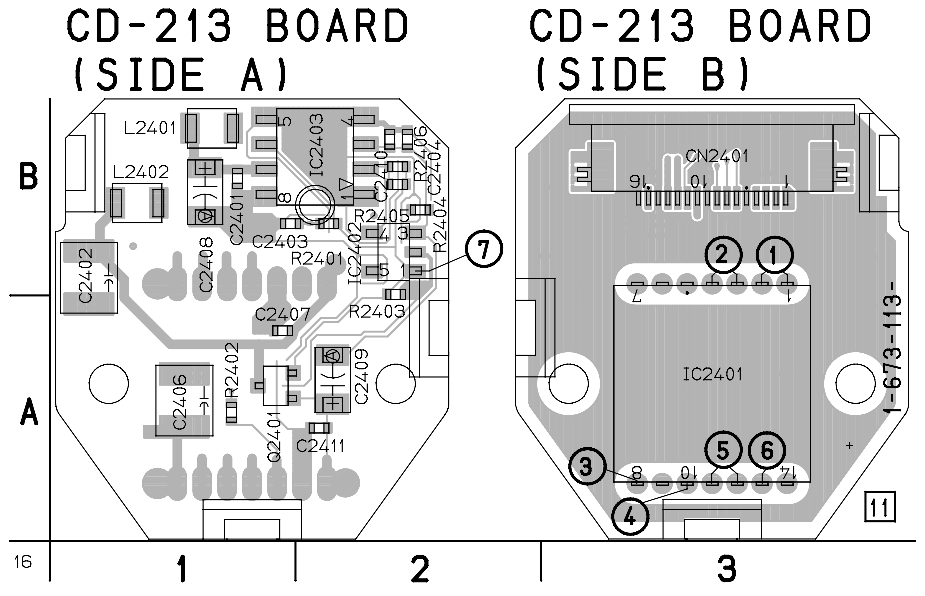


⑦ Q1401 Ⓔ



CD-213 (CCD IMAGER) PRINTED WIRING BOARD (960H MODEL)

— Ref. No. CD-213 Board; 10,000 Series —


CD-213 BOARD (SIDE A)
CD-213 BOARD (SIDE B)
L2401
L2402
IC2403
C2408
C2401
C2403
R2401
C2402
C2407
R2403
C2406
R2402
C2409
Q2401
C2411
R2404
C2404
C2410
CN2401
IC2401
1-673-113-
B
A
1
2
3
16
11
① ② ③ ④ ⑤ ⑥ ⑦

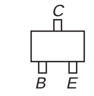
CD-213 BOARD

C2401	B-1
C2402	A-1
C2403	B-1
C2404	B-2
C2406	A-1
C2407	A-1
C2408	B-1
C2409	A-2
C2410	B-2
C2411	A-2
CN2401	B-3
IC2401	A-3
IC2402	B-2
IC2403	B-2
L2401	B-1
L2402	B-1
Q2401	A-1
R2401	B-2
R2402	A-1
R2403	B-2
R2404	B-2
R2405	B-2
R2406	B-2

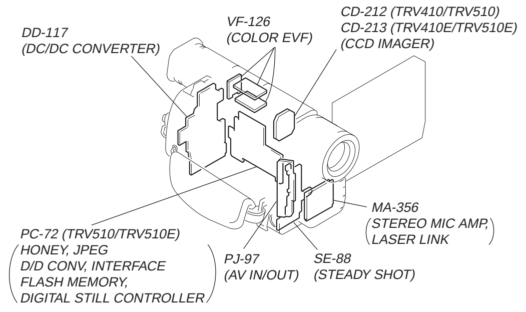
For printed wiring boards

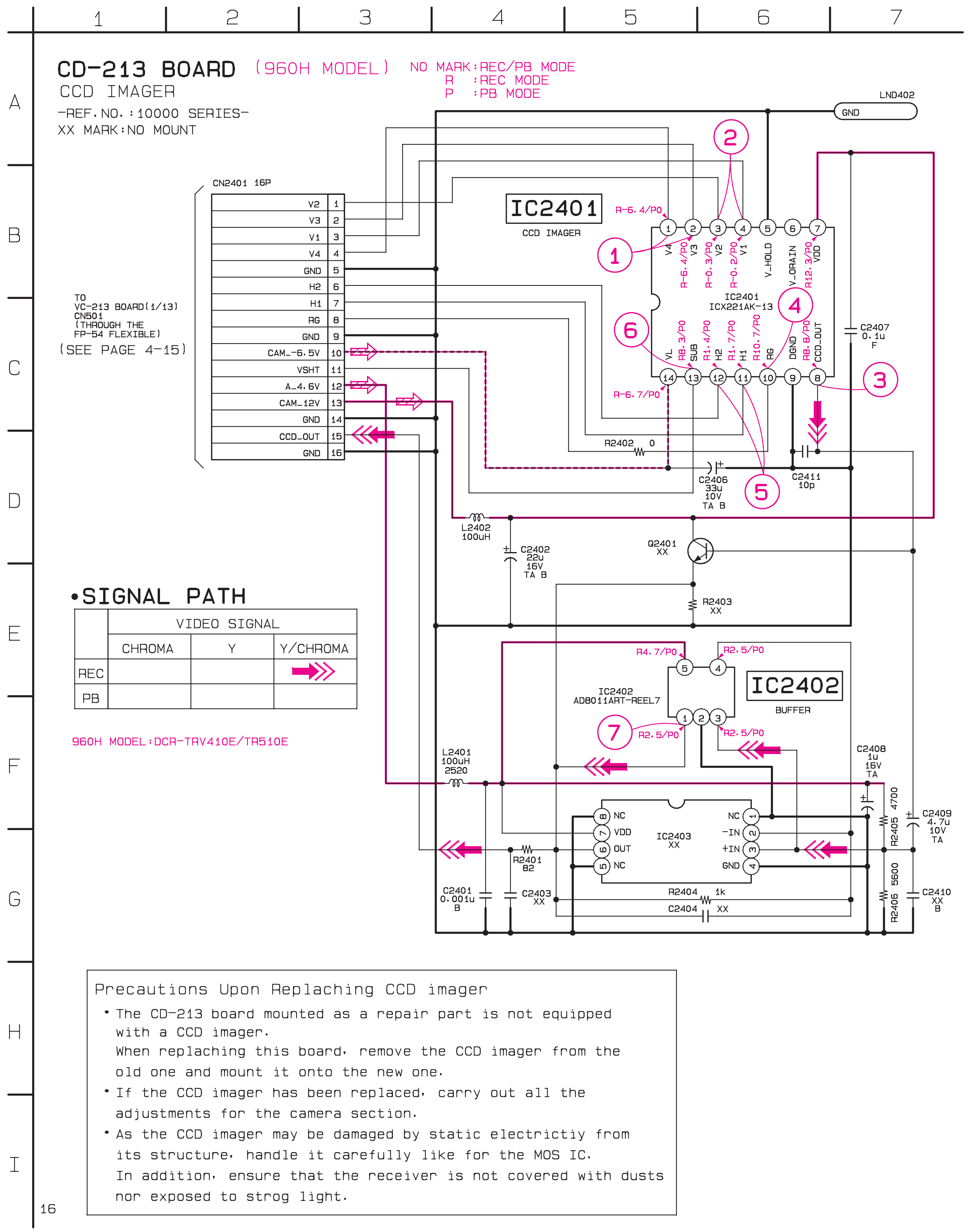
- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
- Chip parts

Transistor



There are few cases that the part printed on this diagram isn't mounted in this model.


DD-117 (DC/DC CONVERTER)
VF-126 (COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
MA-356 (STEREO MIC AMP, LASER LINK)
PC-72 (TRV510/TRV510E)
HONEY, JPEG
D/D CONV, INTERFACE
FLASH MEMORY,
DIGITAL STILL CONTROLLER
PJ-97 (AV IN/OUT)
SE-88 (STEADY SHOT)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I
CD-213 BOARD (960H MODEL)
CCD IMAGER
-REF. NO. : 10000 SERIES-
XX MARK : NO MOUNT
NO MARK : REC/PB MODE
R : REC MODE
P : PB MODE
LND402
GND
CN2401 16P
V2 1
V3 2
V1 3
V4 4
GND 5
H2 6
H1 7
RG 8
GND 9
CAM_-6.5V 10
VSHT 11
A_4.6V 12
CAM_12V 13
GND 14
CCD_OUT 15
GND 16
TO VC-213 BOARD (1/13) CN501 (THROUGH THE FP-54 FLEXIBLE)
(SEE PAGE 4-15)
IC2401
CCD IMAGER
IC2401 ICX221AK-13
V4
V3
V2
V1
V_HOLD
V_DRAIN
VDD
VL
SUB
H2
H1
RG
DGND
CCD_OUT
R-6.4/P0
R-0.3/P0
R-0.2/P0
R12.3/P0
R8.3/P0
R1.4/P0
R1.7/P0
R10.7/P0
R8.8/P0
R-6.7/P0
C2407 0.1u F
R2402 0
C2406 33u 10V TA B
C2411 10p
L2402 100uH
C2402 22u 16V TA B
Q2401 XX
R2403 XX
IC2402
BUFFER
IC2402 AD8011ART-REEL7
R4.7/P0
R2.5/P0
960H MODEL : DCR-TRV410E/TR510E
L2401 100uH 2520
C2408 1u 16V TA
IC2403 XX
NC
VDD
OUT
-IN
+IN
GND
R2401 82
R2404 1k
C2404 XX
C2401 0.001u B
C2403 XX
R2405 4700
R2406 5600
C2409 4.7u 10V TA
C2410 XX B
16
① ② ③ ④ ⑤ ⑥ ⑦

• SIGNAL PATH

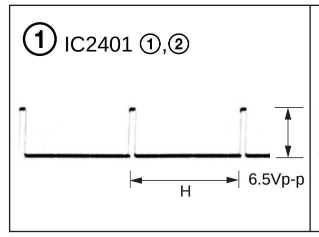
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡
PB			

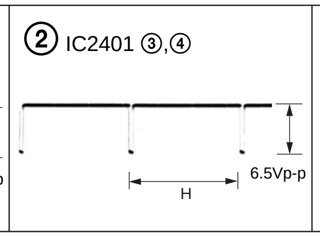
Precautions Upon Replaching CCD imager

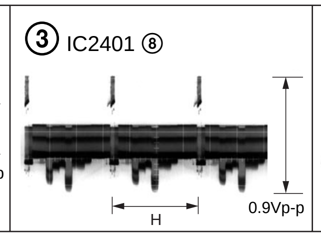
- The CD-213 board mounted as a repair part is not equipped with a CCD imager.
  When replaching this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electrictiy from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strog light.

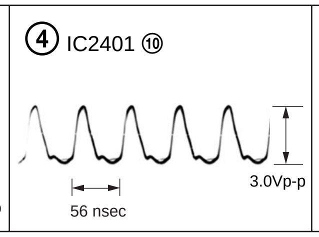
CD-213 BOARD

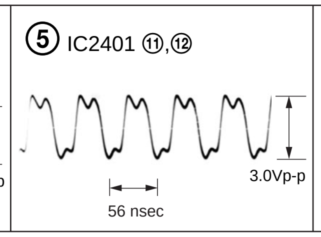
CAMERA REC

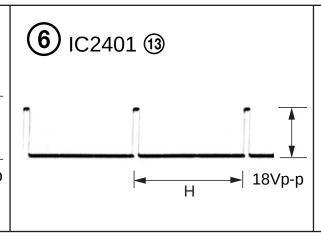

① IC2401 ①,②

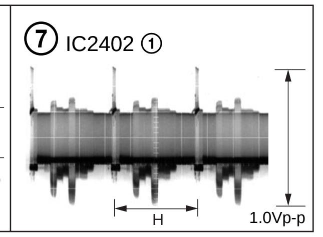

② IC2401 ③,④


③ IC2401 ⑧


④ IC2401 ⑩

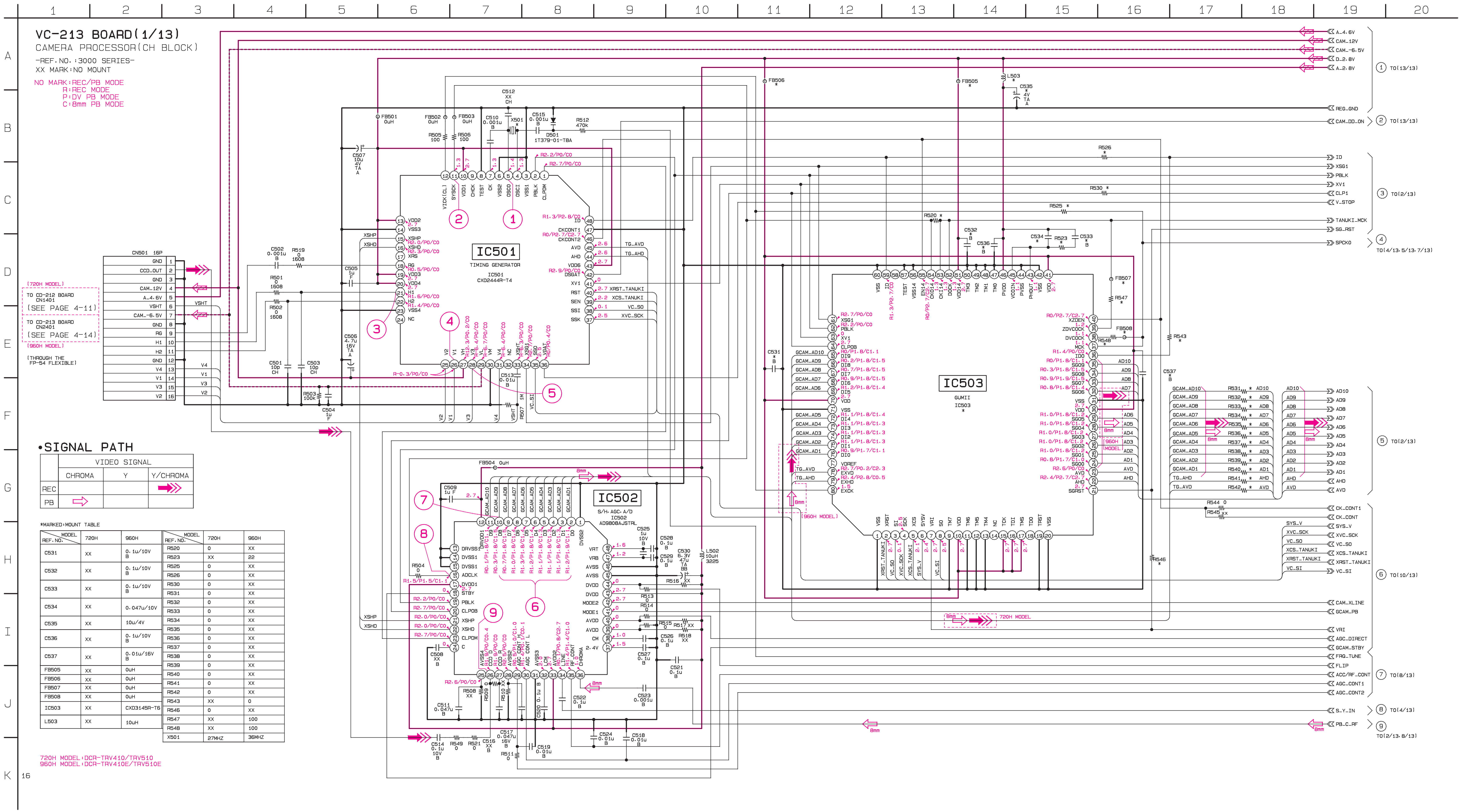

⑤ IC2401 ⑪,⑫


⑥ IC2401 ⑬


⑦ IC2402 ①

For schematic diagram

- Refer to page 4-65 for printed wiring board.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D
E
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G
H
I
J
K
16
IC501
TIMING GENERATOR
IC501
CXD2444R-T4
IC502
S/H, AGC, A/D
IC502
AD9808AJSTRL
IC503
GUMII
IC503
CN501 16P
X501
TO CD-212 BOARD CN1401
(SEE PAGE 4-11)
TO CD-213 BOARD CN2401
(SEE PAGE 4-14)
(THROUGH THE FP-54 FLEXIBLE)
(720H MODEL)
(960H MODEL)
TO(13/13)
TO(2/13)
TO(4/13,5/13,7/13)
TO(10/13)
TO(8/13)
TO(4/13)
TO(2/13,8/13)
720H MODEL
960H MODEL
8mm

VC-213 BOARD(1/13)

CAMERA PROCESSOR(CH BLOCK)

-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R:REC MODE
P:DV PB MODE
C:8mm PB MODE

•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡
PB	⇨		

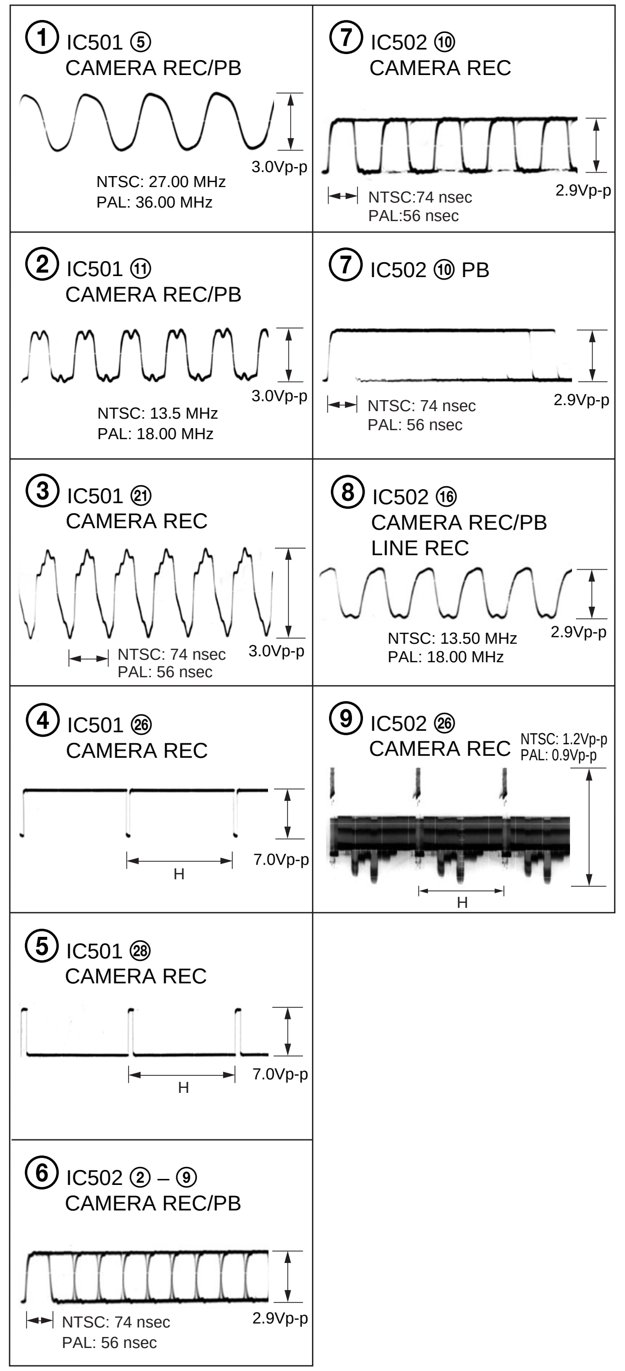
*MARKED:MOUNT TABLE

REF.NO. \ MODEL	720H	960H
C531	XX	0.1u/10V B
C532	XX	0.1u/10V B
C533	XX	0.1u/10V B
C534	XX	0.047u/10V
C535	XX	10u/4V
C536	XX	0.1u/10V B
C537	XX	0.01u/16V B
FB505	XX	0uH
FB506	XX	0uH
FB507	XX	0uH
FB508	XX	0uH
IC503	XX	CXD3145R-T6
L503	XX	10uH

REF.NO. \ MODEL	720H	960H
R520	0	XX
R523	XX	22
R525	0	XX
R526	0	XX
R530	0	XX
R531	0	XX
R532	0	XX
R533	0	XX
R534	0	XX
R535	0	XX
R536	0	XX
R537	0	XX
R538	0	XX
R539	0	XX
R540	0	XX
R541	0	XX
R542	0	XX
R543	XX	0
R546	0	XX
R547	XX	100
R548	XX	100
X501	27MHZ	36MHZ

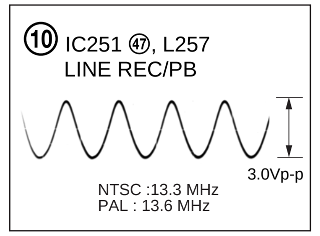
720H MODEL:DCR-TRV410/TRV510
960H MODEL:DCR-TRV410E/TRV510E

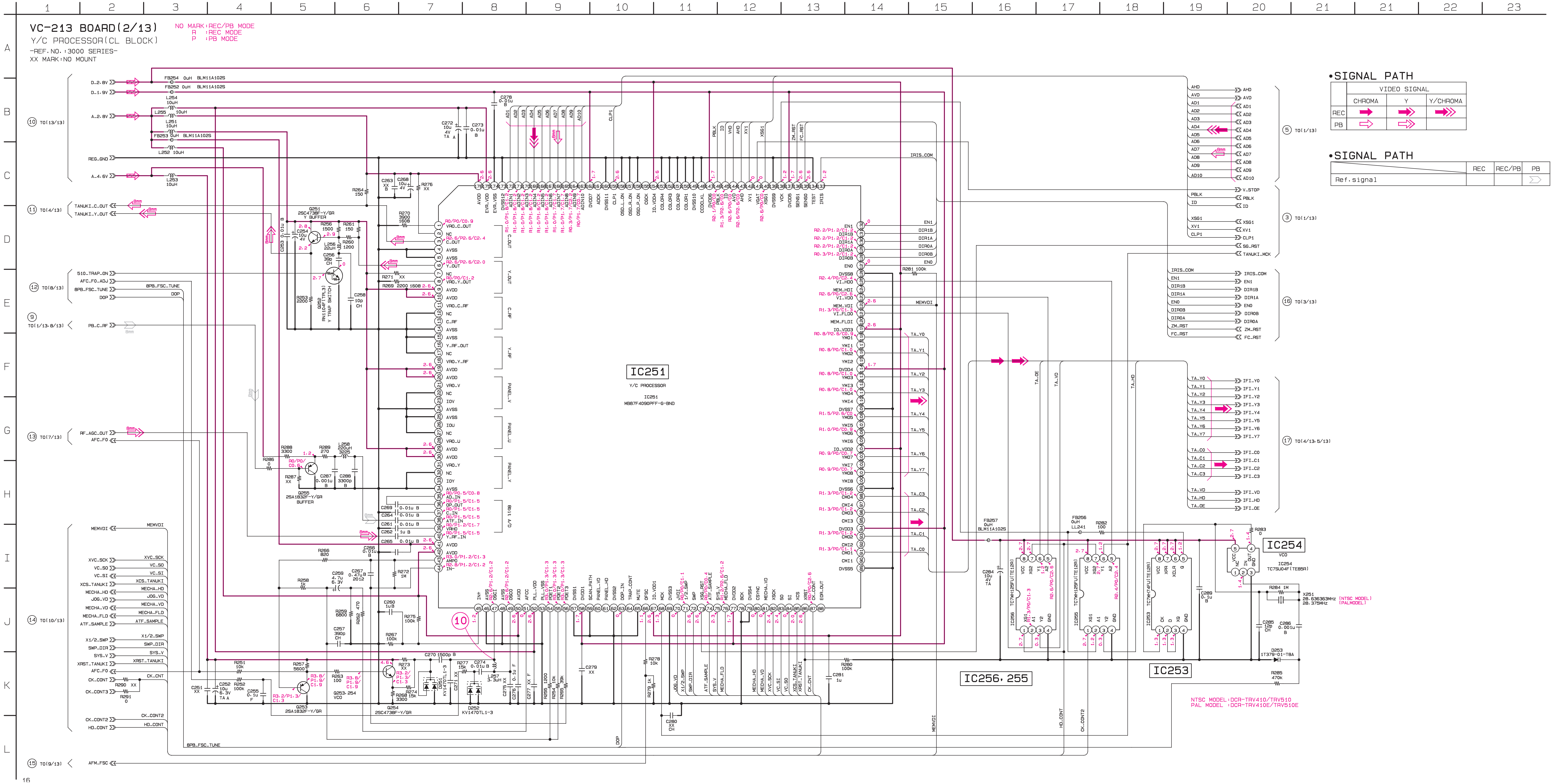
VC-213 BOARD (1/13)



For schematic diagram
- Refer to page 4-65 for printed wiring board.

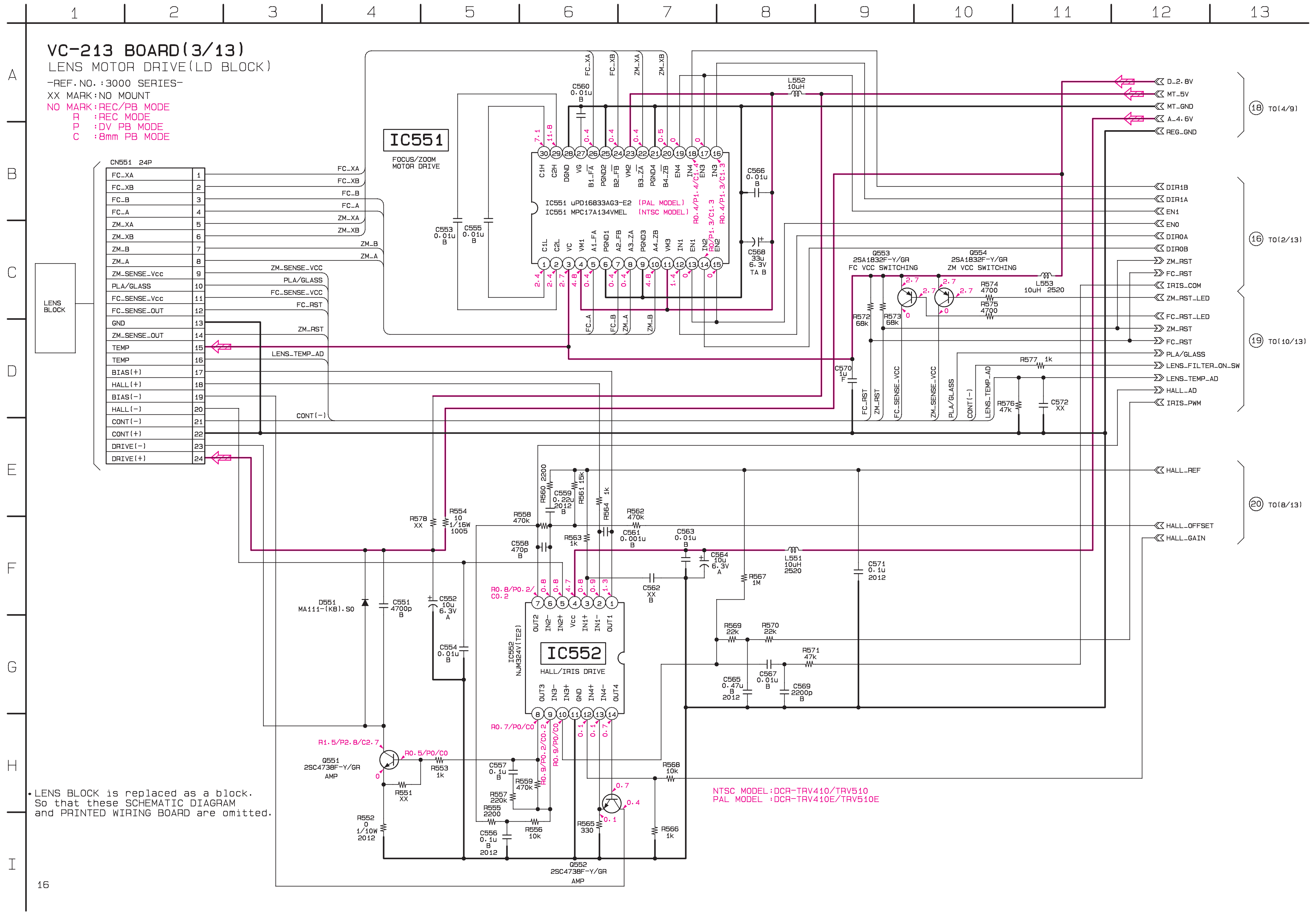
VC-213 BOARD (2/13)




VC-213 BOARD(2/13)
Y/C PROCESSOR(CL BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC251
Y/C PROCESSOR
IC251
MB87F4090PFF-G-BND
IC256, 255
IC253
IC254
VCO
IC254
TC7SU04F(TE85R)
X251
28.636363MHz (NTSC MODEL)
28.375MHz (PALMODEL)
NTSC MODEL:DCR-TRV410/TRV510
PAL MODEL :DCR-TRV410E/TRV510E
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
•SIGNAL PATH
REC
REC/PB
PB
Ref.signal
⑩ TO(13/13)
⑪ TO(4/13)
⑫ TO(8/13)
⑨ TO(1/13,8/13)
⑬ TO(7/13)
⑭ TO(10/13)
⑮ TO(9/13)
⑤ TO(1/13)
③ TO(1/13)
⑯ TO(3/13)
⑰ TO(4/13,5/13)
Q251 2SC4738F-Y/GR Y BUFFER
Q252 RN1104F(TPL3) Y TRAP SWITCH
Q253 2SA1832F-Y/GR
Q254 2SC4738F-Y/GR
Q255 2SA1832F-Y/GR BUFFER
D251 KV1470TL1-3
D252 KV1470TL1-3
D253 1T379-01-TBA
FB252 0uH BLM11A102S
FB253 0uH BLM11A102S
FB254 0uH BLM11A102S
FB256 0uH LL241
FB257 0uH BLM11A102S
IC256 TC7WH125FU(TE12R)
IC255 TC7WH125FU(TE12R)
IC253 TC7WH74FU(TE12R)
D_2.8V
D_1.9V
A_2.8V
REG_GND
A_4.6V
TANUKI_C_OUT
TANUKI_Y_OUT
510_TRAP_ON
AFC_F0_ADJ
8PB_FSC_TUNE
DOP
PB_C_RF
RF_AGC_OUT
AFC_F0
MEMVDI
XVC_SCK
VC_SO
VC_SI
XCS_TANUKI
MECHA_HD
JOG_VD
MECHA_VD
MECHA_FLD
ATF_SAMPLE
X1/2_SWP
SWP_DIR
SYS_V
XRST_TANUKI
AFC_F0
CK_CONT
CK_CONT3
CK_CONT2
HD_CONT
AFM_FSC
AHD
AVD
AD1
AD2
AD3
AD4
AD5
AD6
AD7
AD8
AD9
AD10
V_STOP
PBLK
ID
XSG1
XV1
CLP1
SG_RST
TANUKI_MCK
IRIS_COM
EN1
DIR1B
DIR1A
EN0
DIR0B
DIR0A
ZM_RST
FC_RST
IFI_Y0
IFI_Y1
IFI_Y2
IFI_Y3
IFI_Y4
IFI_Y5
IFI_Y6
IFI_Y7
IFI_C0
IFI_C1
IFI_C2
IFI_C3
IFI_VD
IFI_HD
IFI_OE

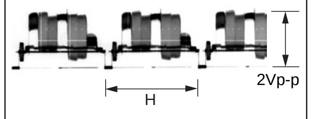
For schematic diagram

- Refer to page 4-65 for printed wiring board.

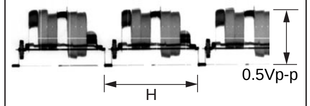

VC-213 BOARD(3/13)
LENS MOTOR DRIVE(LD BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :DV PB MODE
C :8mm PB MODE
CN551 24P
LENS BLOCK
FC_XA 1
FC_XB 2
FC_B 3
FC_A 4
ZM_XA 5
ZM_XB 6
ZM_B 7
ZM_A 8
ZM_SENSE_Vcc 9
PLA/GLASS 10
FC_SENSE_Vcc 11
FC_SENSE_OUT 12
GND 13
ZM_SENSE_OUT 14
TEMP 15
TEMP 16
BIAS(+) 17
HALL(+) 18
BIAS(-) 19
HALL(-) 20
CONT(-) 21
CONT(+) 22
DRIVE(-) 23
DRIVE(+) 24
IC551
FOCUS/ZOOM MOTOR DRIVE
IC551 uPD16833AG3-E2 (PAL MODEL)
IC551 MPC17A134VMEL (NTSC MODEL)
C1H C2H DGND VG B1_FA PGND2 B2_FB VM2 B3_ZA PGND4 B4_ZB EN4 IN4 EN3 IN3
C1L C2L VC VM1 A1_FA PGND1 A2_FB A3_ZA PGND3 A4_ZB VM3 IN1 EN1 IN2 EN2
C553 0.01u B
C555 0.01u B
C560 0.01u B
C566 0.01u B
C568 33u 6.3V TA B
L552 10uH
L553 10uH 2520
Q553 2SA1832F-Y/GR FC VCC SWITCHING
Q554 2SA1832F-Y/GR ZM VCC SWITCHING
R572 68k
R573 68k
R574 4700
R575 4700
R576 47k
R577 1k
C570 1u F
C572 XX
IC552
HALL/IRIS DRIVE
IC552 NJM3324V(TE2)
OUT2 IN2- IN2+ Vcc IN1+ IN1- OUT1
OUT3 IN3- IN3+ GND IN4+ IN4- OUT4
D551 MA111-(K8).S0
C551 4700p B
C552 10u 6.3V A
C554 0.01u B
R578 XX
R554 10 1/16W 1005
R558 470k
C558 470p B
R560 2200
C559 0.22u 2012 B
R561 15k
R564 1k
R563 1k
R562 470k
C561 0.001u B
C563 0.01u B
C562 XX B
C564 10u 6.3V A
L551 10uH 2520
R567 1M
C571 0.1u 2012
R569 22k
R570 22k
R571 47k
C565 0.47u B 2012
C567 0.01u B
C569 2200p B
Q551 2SC4738F-Y/GR AMP
R551 XX
R553 1k
R552 0 1/10W 2012
C557 0.1u B
R559 470k
R557 220k
R555 2200
C556 0.1u B 2012
R556 10k
R565 330
R568 10k
R566 1k
Q552 2SC4738F-Y/GR AMP
D_2.8V
MT_5V
MT_GND
A_4.6V
REG_GND
⑱ TO(4/9)
DIR1B
DIR1A
EN1
EN0
DIR0A
DIR0B
ZM_RST
FC_RST
IRIS_COM
⑯ TO(2/13)
ZM_RST_LED
FC_RST_LED
ZM_RST
FC_RST
PLA/GLASS
LENS_FILTER_ON_SW
LENS_TEMP_AD
HALL_AD
IRIS_PWM
⑲ TO(10/13)
HALL_REF
HALL_OFFSET
HALL_GAIN
⑳ TO(8/13)
• LENS BLOCK is replaced as a block. So that these SCHEMATIC DIAGRAM and PRINTED WIRING BOARD are omitted.
NTSC MODEL :DCR-TRV410/TRV510
PAL MODEL :DCR-TRV410E/TRV510E
16

VC-213 BOARD (4/13)

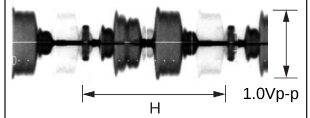
⑪ IC643 ⑦
CAMERA REC/PB



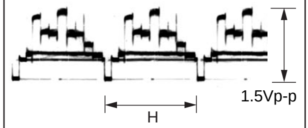
⑫ IC643 ⑨, IC644 ㊶
CAMERA REC/PB
IR ON



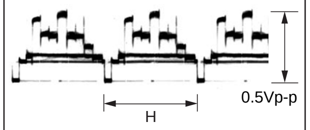
⑬ IC643 ⑫
CAMERA REC/PB



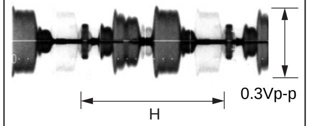
⑭ IC643 ⑯
CAMERA REC/PB



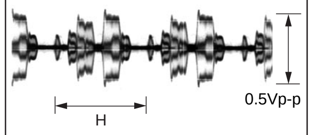
⑮ IC643 ㉗ PB



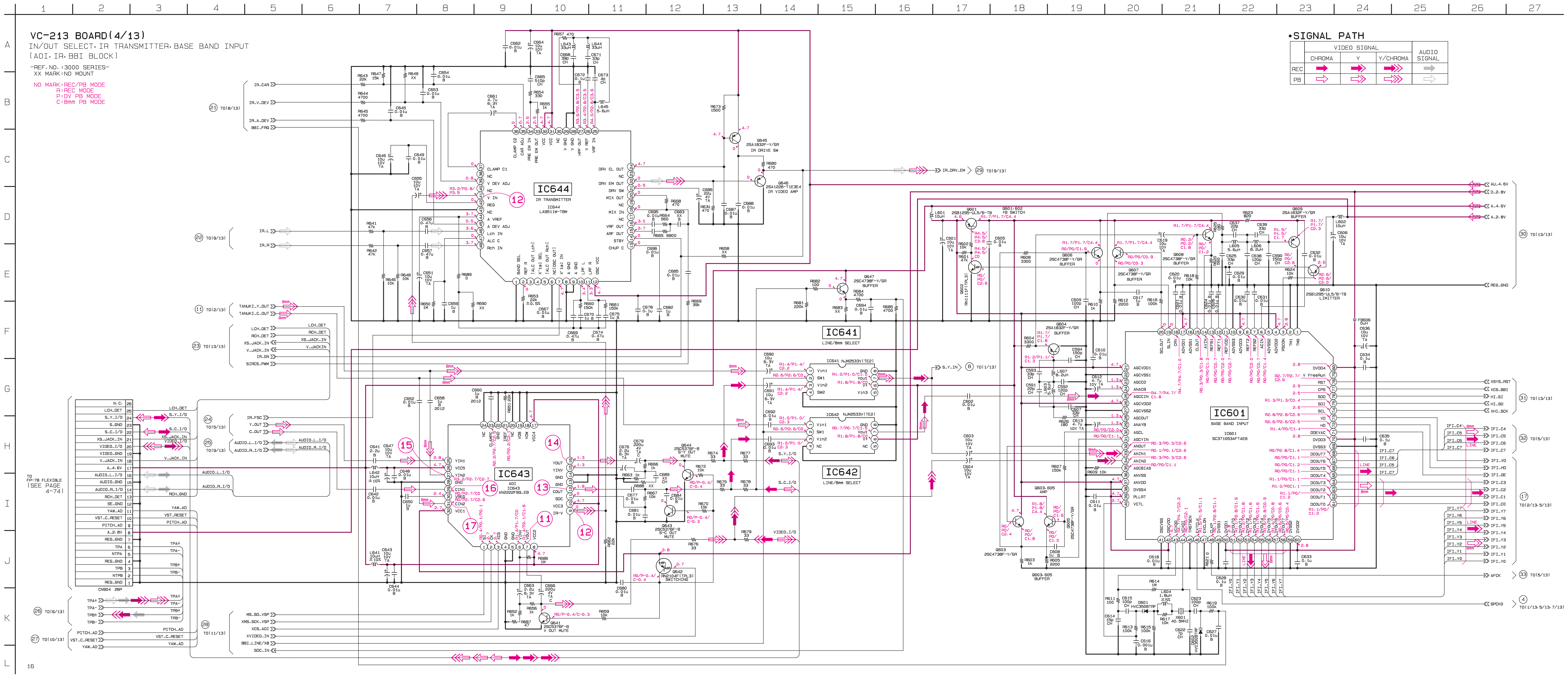
⑯ IC643 ㉙ PB



⑰ IC643 ㉛ PB

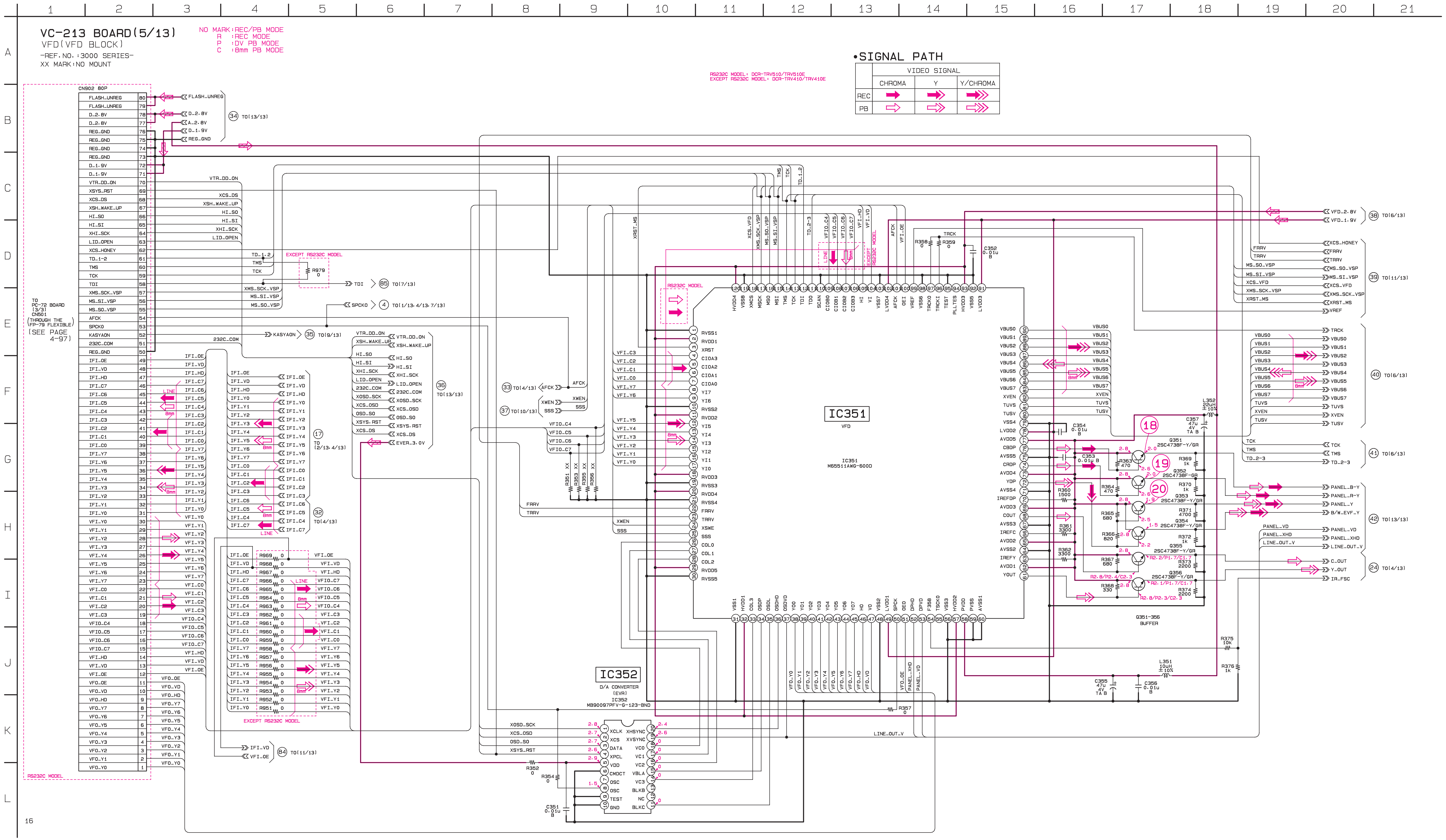


For schematic diagram
- Refer to page 4-65 for printed wiring board.

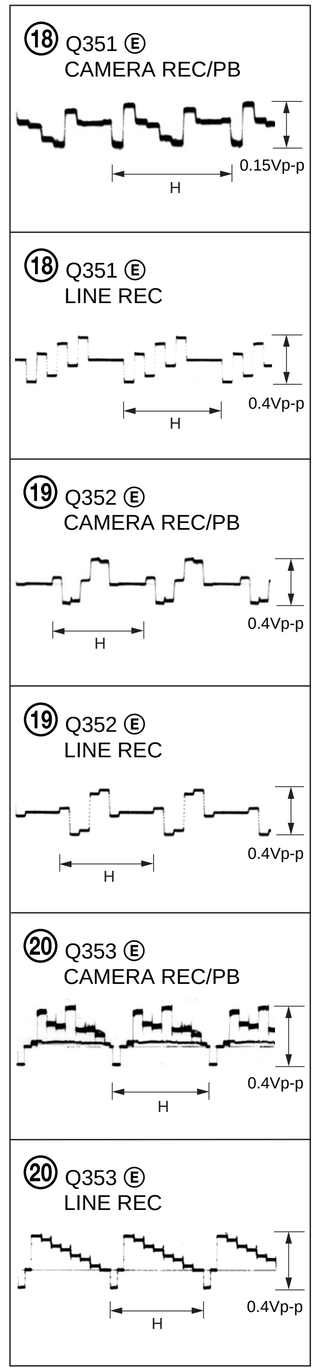

VC-213 BOARD(4/13)
IN/OUT SELECT, IR TRANSMITTER, BASE BAND INPUT
(AOI, IR, BBI BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:DV PB MODE
C:8mm PB MODE
IC644
IR TRANSMITTER
IC643
AOI
IC641
LINE/8mm SELECT
IC642
LINE/8mm SELECT
IC601
BASE BAND INPUT
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB
TO FP-78 FLEXIBLE (SEE PAGE 4-74)
CN604 26P

For schematic diagram

- Refer to page 4-65 for printed wiring board.

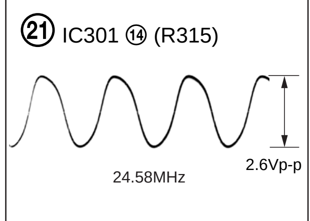

VC-213 BOARD(5/13)
VFD(VFD BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :DV PB MODE
C :8mm PB MODE
RS232C MODEL: DCR-TRV510/TRV510E
EXCEPT RS232C MODEL: DCR-TRV410/TRV410E
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
CN902 80P
TO PC-72 BOARD (3/3) CN501 (THROUGH THE FP-79 FLEXIBLE) (SEE PAGE 4-97)
IC351
VFD
IC351 M65511AWG-600D
IC352
D/A CONVERTER (EVR)
IC352 MB90097PFV-G-123-BND
Q351-356 BUFFER
EXCEPT RS232C MODEL
RS232C MODEL
TO(13/13)
TO(7/13)
TO(1/13, 4/13, 7/13)
TO(9/13)
TO(4/13)
TO(10/13)
TO(2/13, 4/13)
TO(11/13)
TO(6/13)
TO(13/13)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
A B C D E F G H I J K L
16

VC-213 BOARD (5/13)



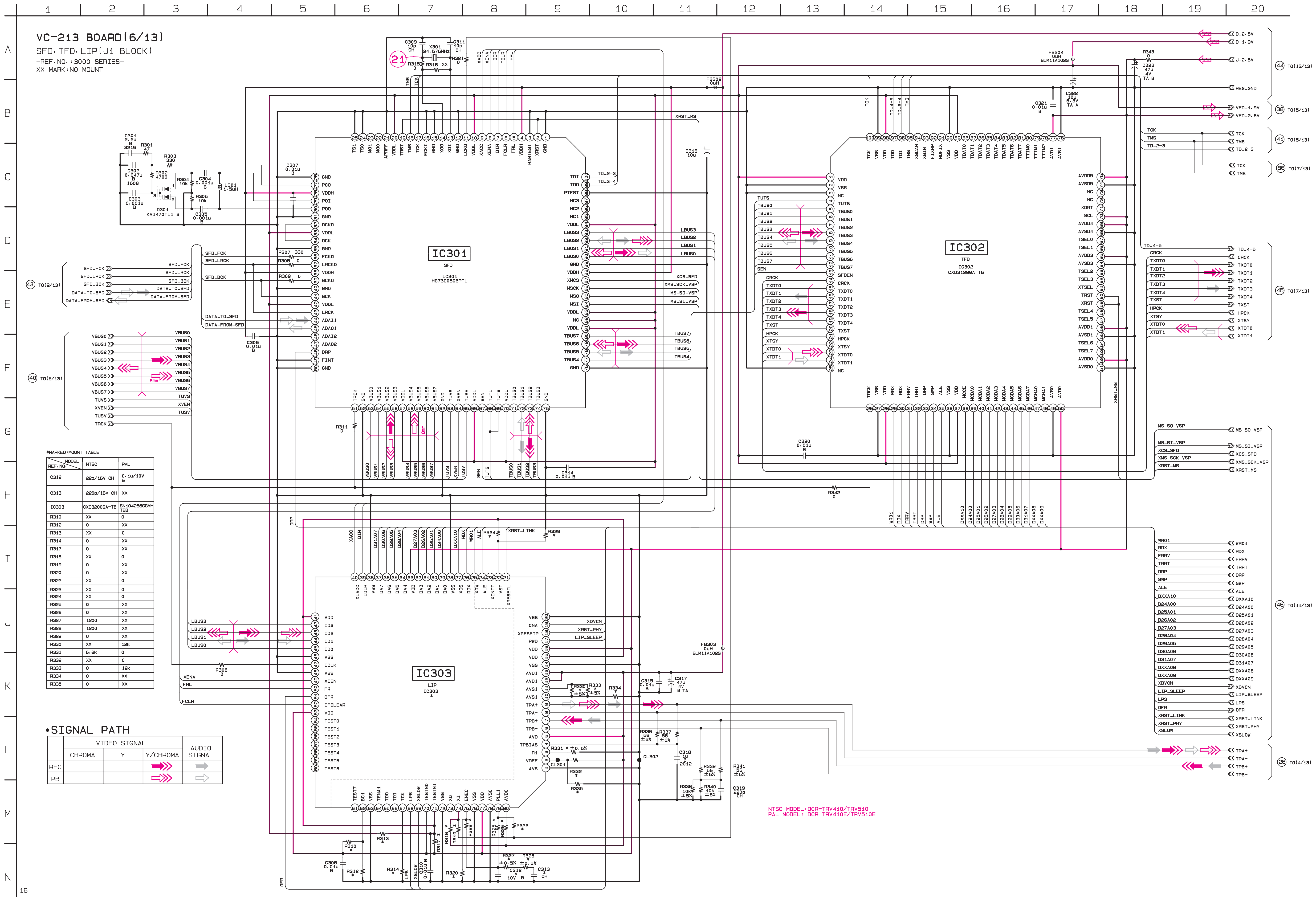
VC-213 BOARD (6/13)

CAMERA REC/PB



For schematic diagram

- Refer to page 4-65 for printed wiring board.



VC-213 BOARD(6/13)
SFD,TFD,LIP(J1 BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
IC301
SFD
IC301
HG73C050BPTL
IC302
TFD
IC302
CXD3129GA-T6
IC303
LIP
IC303
D301
KV1470TL1-3
X301
24.576MHz
FB302
FB303
FB304
43 TO(9/13)
SFD_FCK
SFD_LRCK
SFD_BCK
DATA_TO_SFD
DATA_FROM_SFD
40 TO(5/13)
VBUS0
VBUS1
VBUS2
VBUS3
VBUS4
VBUS5
VBUS6
VBUS7
TUVS
XVEN
TUSV
TRCK
8mm
44 TO(13/13)
D_2.8V
D_1.9V
J_2.8V
REG_GND
38 TO(5/13)
VFD_1.9V
VFD_2.8V
41 TO(5/13)
TCK
TMS
TD_2-3
86 TO(7/13)
TCK
TMS
45 TO(7/13)
TD_4-5
CRCK
TXDT0
TXDT1
TXDT2
TXDT3
TXDT4
TXST
HPCK
XTSY
XTDT0
XTDT1
MS_SO_VSP
MS_SI_VSP
XCS_SFD
XMS_SCK_VSP
XRST_MS
46 TO(11/13)
WR01
RDX
FRRV
TRRT
DRP
SWP
ALE
DXXA10
D24A00
D25A01
D26A02
D27A03
D28A04
D29A05
D30A06
D31A07
DXXA08
DXXA09
XDVCN
LIP_SLEEP
LPS
OFR
XRST_LINK
XRST_PHY
XSLOW
26 TO(4/13)
TPA+
TPA-
TPB+
TPB-
NTSC MODEL:DCR-TRV410/TRV510
PAL MODEL: DCR-TRV410E/TRV510E

*MARKED:MOUNT TABLE

REF.NO. \ MODEL	NTSC	PAL
C312	22p/16V CH	0.1u/10V B
C313	220p/16V CH	XX
IC303	CXD3200GA-T6	SN104266GGM-TEB
R310	XX	0
R312	0	XX
R313	XX	0
R314	0	XX
R317	0	XX
R318	XX	0
R319	0	XX
R320	0	XX
R322	XX	0
R323	XX	0
R324	XX	0
R325	0	XX
R326	0	XX
R327	1200	XX
R328	1200	XX
R329	0	XX
R330	XX	12k
R331	6.8k	0
R332	XX	0
R333	0	12k
R334	0	XX
R335	0	XX

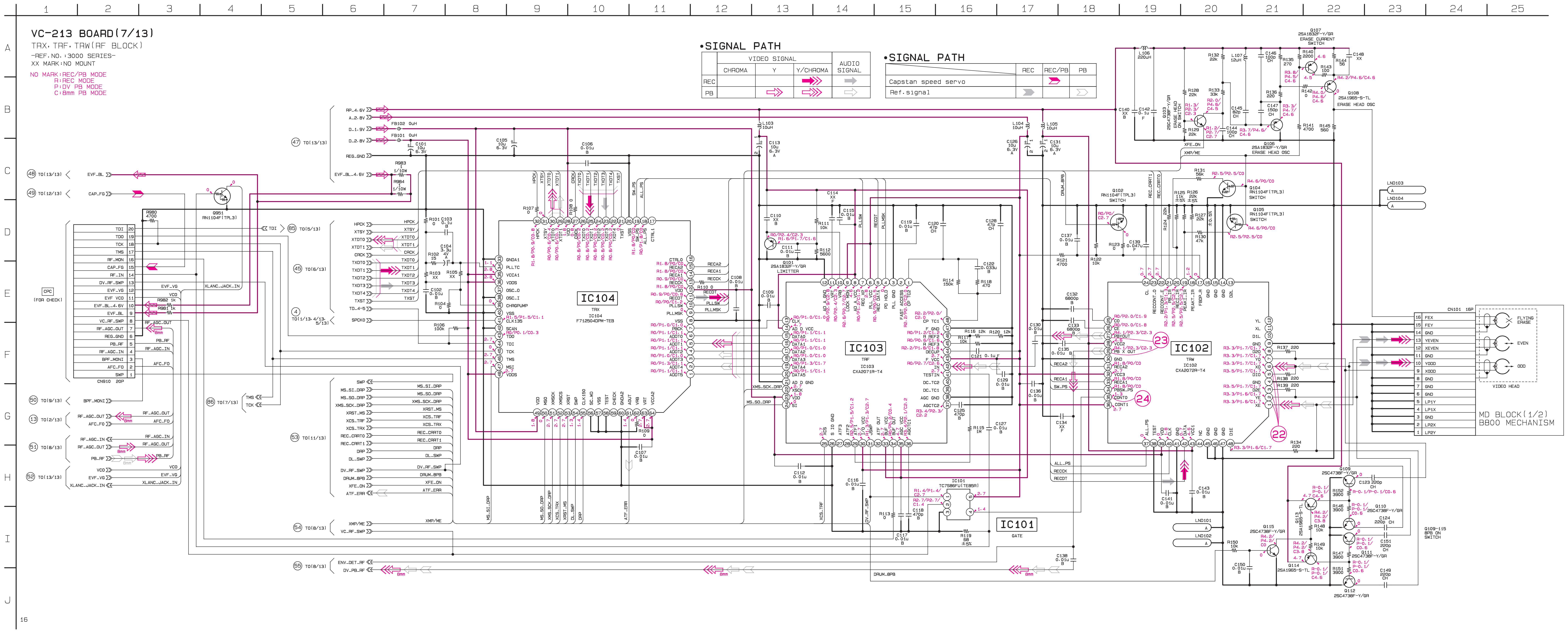
•SIGNAL PATH

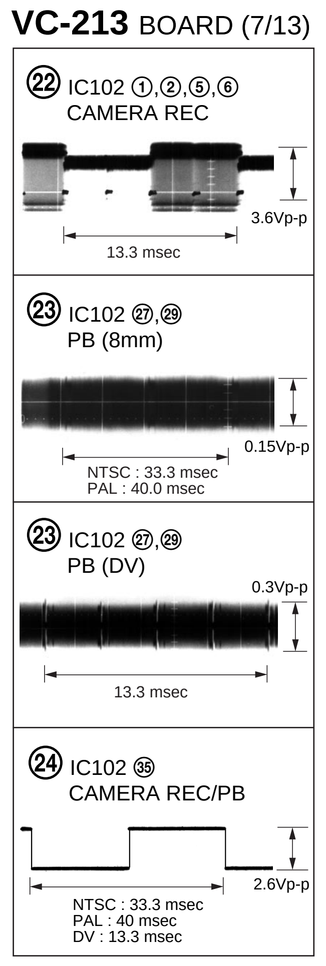
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

SFD, TFD, LIP

VC-213 (6/13)

For schematic diagram
- Refer to page 4-65 for printed wiring board.

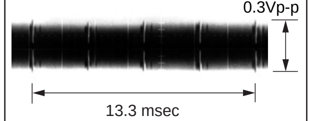

VC-213 BOARD(7/13)
TRX, TRF, TRW(RF BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:DV PB MODE
C:8mm PB MODE
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB
•SIGNAL PATH
REC
REC/PB
PB
Capstan speed servo
Ref.signal
IC104
TRX
IC104
F7125040PM-TEB
IC103
TRF
IC103
CXA2071R-T4
IC102
TRW
IC102
CXA2072R-T4
IC101
GATE
IC101
TC7S86FU(TE85R)
CN910 20P
CPC (FOR CHECK)
CN101 16P
FLYING ERASE
EVEN
ODD
VIDEO HEAD
MD BLOCK(1/2)
B800 MECHANISM
Q101
2SA1832F-Y/GR
LIMITTER
Q102
RN1104F(TPL3)
SWITCH
Q104
RN1104F(TPL3)
SWITCH
Q105
RN1104F(TPL3)
SWITCH
Q106
2SA1832F-Y/GR
ERASE HEAD OSC
Q107
2SA1832F-Y/GR
ERASE CURRENT SWITCH
Q108
2SA1965-S-TL
ERASE HEAD OSC
Q109-115
8PB ON SWITCH
Q951
RN1104F(TPL3)
16

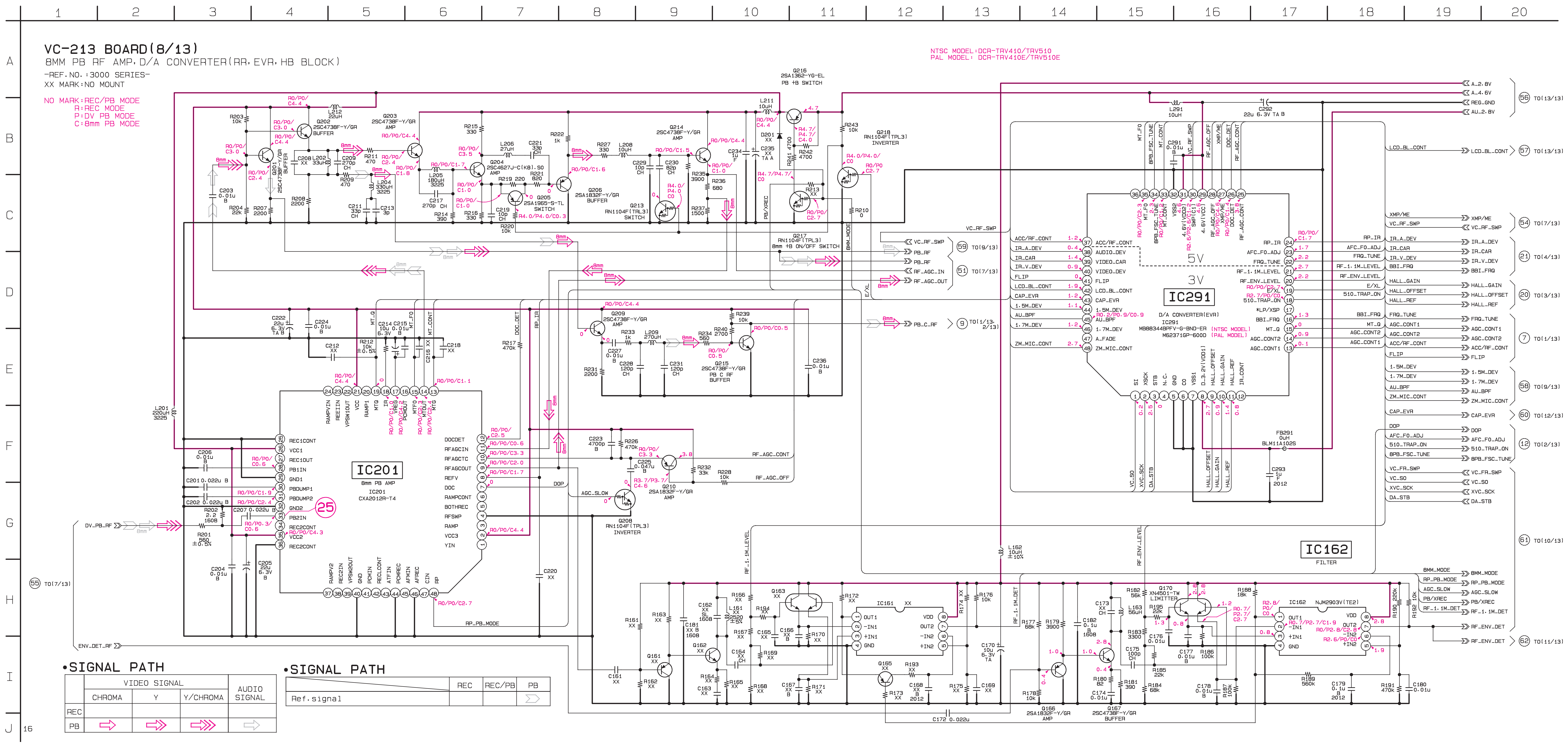


For schematic diagram
- Refer to page 4-65 for printed wiring board.

VC-213 BOARD (8/13)

(25) IC201 ㉝
PB (DV)




1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
16
IC201
8mm PB AMP
IC201
CXA2012R-T4
IC291
D/A CONVERTER(EVR)
IC291
M60934BFP-G-BND-ER (NTSC MODEL)
M62370P-600D (PAL MODEL)
IC161
IC162
NJM2903V(TE2)
IC162
FILTER
5V
3V
Q201 2SC4738F-Y/GR BUFFER
Q202 2SC4738F-Y/GR BUFFER
Q203 2SC4738F-Y/GR AMP
Q204 2SC4627J-C(K8).SO AMP
Q205 2SA1905-S-TL SWITCH
Q206 2SA1832F-Y/GR BUFFER
Q208 RN1104F(TPL3) INVERTER
Q209 2SC4738F-Y/GR AMP
Q212 2SA1832F-Y/GR AMP
Q213 RN1104F(TPL3) SWITCH
Q214 2SC4738F-Y/GR AMP
Q215 2SC4738F-Y/GR PB C RF BUFFER
Q216 2SA1362-YG-EL PB HB SWITCH
Q217 RN1104F(TPL3) 8mm HB ON/OFF SWITCH
Q218 RN1104F(TPL3) INVERTER
Q166 2SA1832F-Y/GR AMP
Q167 2SC4738F-Y/GR BUFFER
Q170 XN4601-TX LIMITTER
L162 10uH ±10%
FB291 0uH BLM11A102S
DV_PB_RF
ENV_DET_RF
RP_PB_MODE
AGC_SLOW
RF_AGC_CONT
RF_AGC_OFF
VC_RF_SWP
PB_C_RF
(55) TO(7/13)
(56) TO(13/13)
(57) TO(13/13)
(54) TO(7/13)
(21) TO(4/13)
(20) TO(3/13)
(7) TO(1/13)
(58) TO(9/13)
(60) TO(12/13)
(12) TO(2/13)
(61) TO(10/13)
(62) TO(1/13)
(59) TO(9/13)
(51) TO(7/13)
(9) TO(1/13, 2/13)

VC-213 BOARD(8/13)
8MM PB RF AMP, D/A CONVERTER(RR, EVR, HB BLOCK)
-REF. NO. :3000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R:REC MODE
P:DV PB MODE
C:8mm PB MODE

NTSC MODEL:DCR-TRV410/TRV510
PAL MODEL: DCR-TRV410E/TRV510E

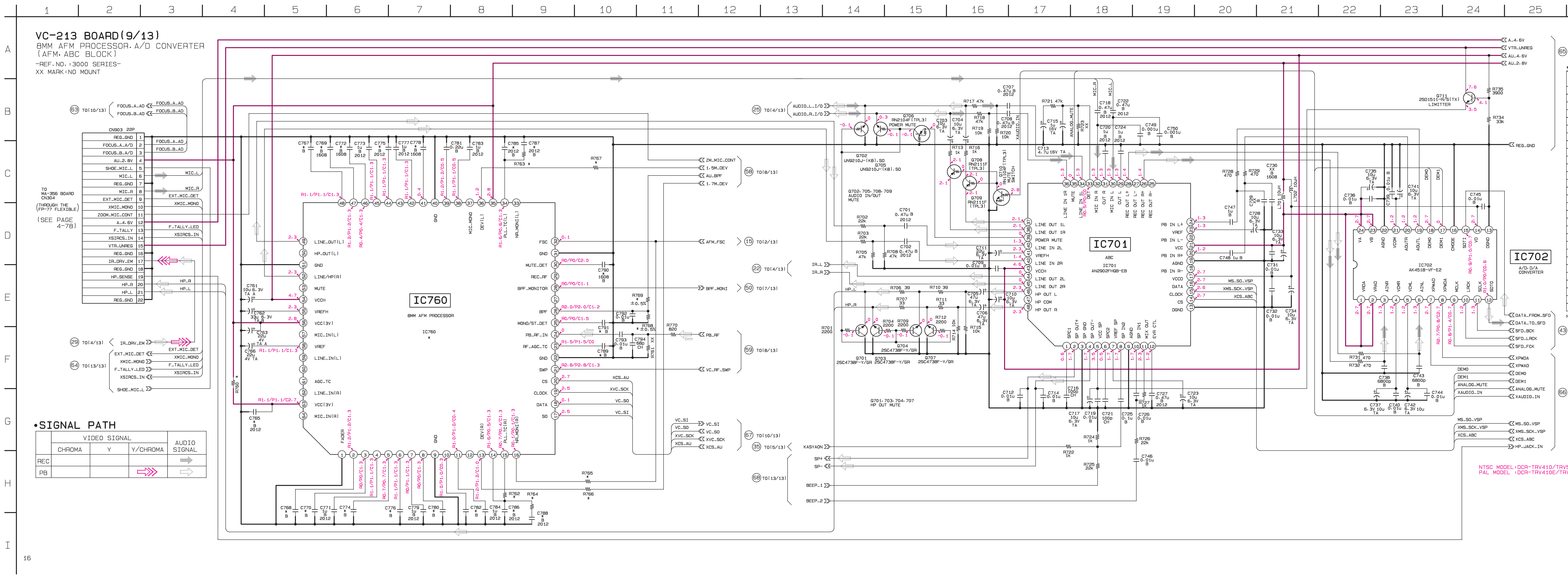
•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB	⇨	⇨»	⇨»»	⇨

•SIGNAL PATH

	REC	REC/PB	PB
Ref. signal			⊳

For schematic diagram
- Refer to page 4-65 for printed wiring board.


VC-213 BOARD(9/13)
8MM AFM PROCESSOR, A/D CONVERTER
(AFM, ABC BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
CN903 22P
TO MA-356 BOARD CN304 (THROUGH THE FP-77 FLEXIBLE) (SEE PAGE 4-78)
IC760
8MM AFM PROCESSOR
IC701
ABC
AN2902FHQB-EB
IC702
A/D·D/A CONVERTER
AK4518-VF-E2
Q705 RN2104F(TPL3) POWER MUTE
Q702, 705, 708, 709 AUDIO IN/OUT MUTE
Q701, 703, 704, 707 HP OUT MUTE
Q711 2SD1511-R/S(TX) LIMITTER
(65) TO(13/13)
(63) TO(10/13)
(25) TO(4/13)
(58) TO(8/13)
(15) TO(2/13)
(22) TO(4/13)
(50) TO(7/13)
(59) TO(8/13)
(29) TO(4/13)
(64) TO(13/13)
(57) TO(10/13)
(35) TO(5/13)
(66) TO(13/13)
(43) TO(6/13)
(66) TO(1/13)
•SIGNAL PATH

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
REC			⇨
PB		⇨	⇨

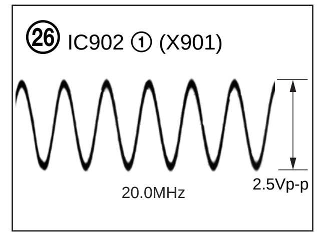
*MARKED:MOUNT TABLE

REF.NO. \ MODEL	NTSC	PAL	
C765	XX	1u/10V B	
C767	XX	2200p/50V B	
C768	4700p/16V B	47k 1/16W	(Note)
C769	4700p/50V B	0.22u/10V B	
C770	0.01u/16V B	0 1/16W	(Note)
C772	0.01u/16V B	0.1u/16V B	
C774	0.01u/16V B	XX	
C775	0.01u/50V B	1u/10V B	
C776	0.01u/16V B	XX	
C778	4700p/50V B	0.1u/16V B	
C780	4700p/16V B	XX	
C782	0.22u B	XX	
C785	1u/10V B	0.22u/16V B	
C786	1u/10V B	0.22u/16V B	
C787	1u/10V B	0.47u/16V B	
C788	1u/10V B	0.47u/16V B	
C789	XX	3300p/16V B	
C790	0.047u/16V B	680p/50V B	
C791	0.01u/16V B	680p/16V B	
IC760	AN2982FH-A-EB	CXA2087R-T6	
R760	0	XX	
R762	0	XX	
R763	100k	470k	
R764	100k	470k	
R765	XX	0	
R766	120k	100k	
R767	120k	100k	
R768	22k	XX	
R769	330k	100k	

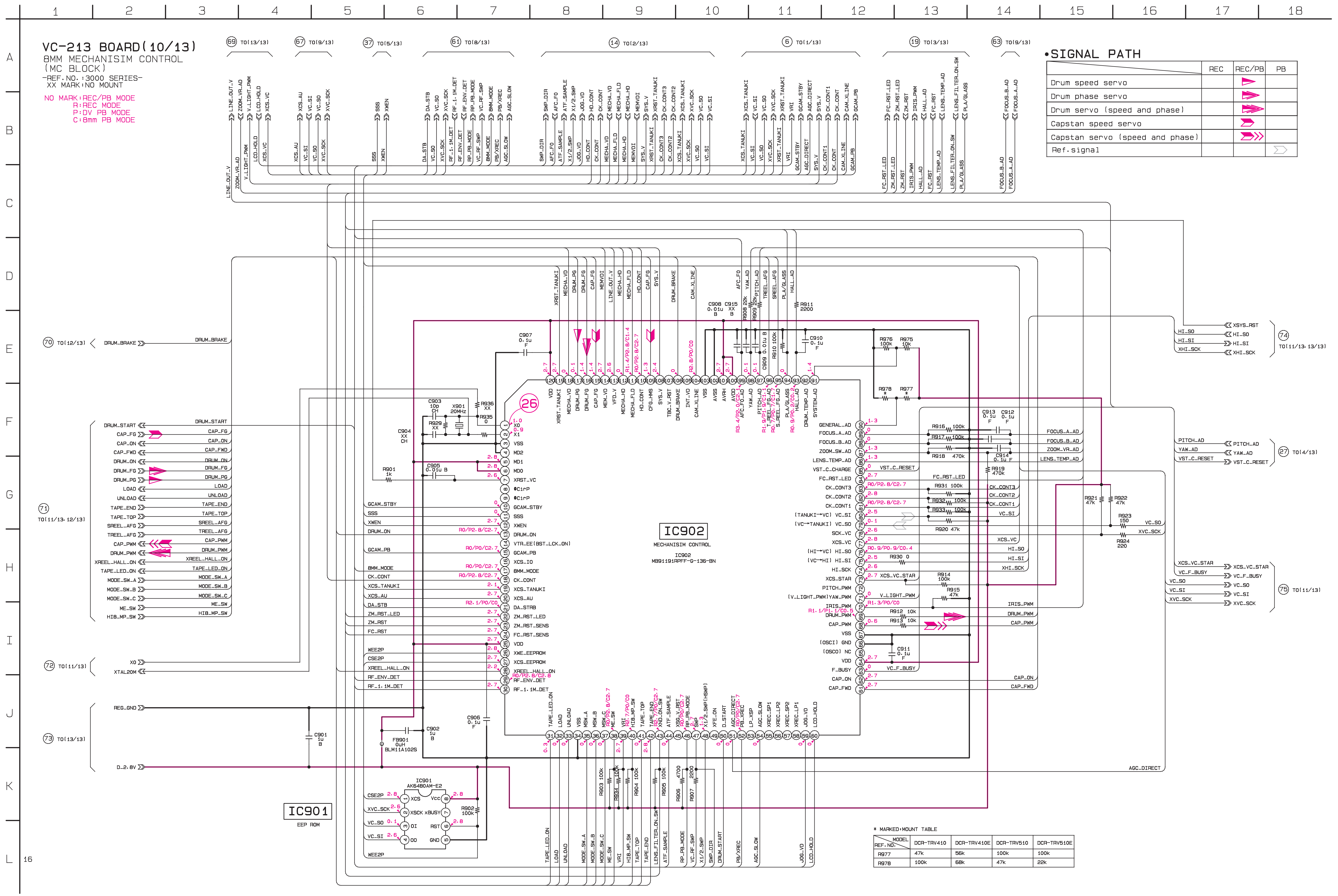
Note:Resistors are mounted to the location where C768, C770 are printed.

NTSC MODEL : DCR-TRV410/TRV510
PAL MODEL : DCR-TRV410E/TRV510E

VC-213 BOARD (10/13)
CAMERA REC/PB



For schematic diagram
- Refer to page 4-65 for printed wiring board.



VC-213 BOARD(10/13)
8MM MECHANISIM CONTROL
(MC BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:DV PB MODE
C:8mm PB MODE
IC902
MECHANISM CONTROL
IC901
EEP ROM

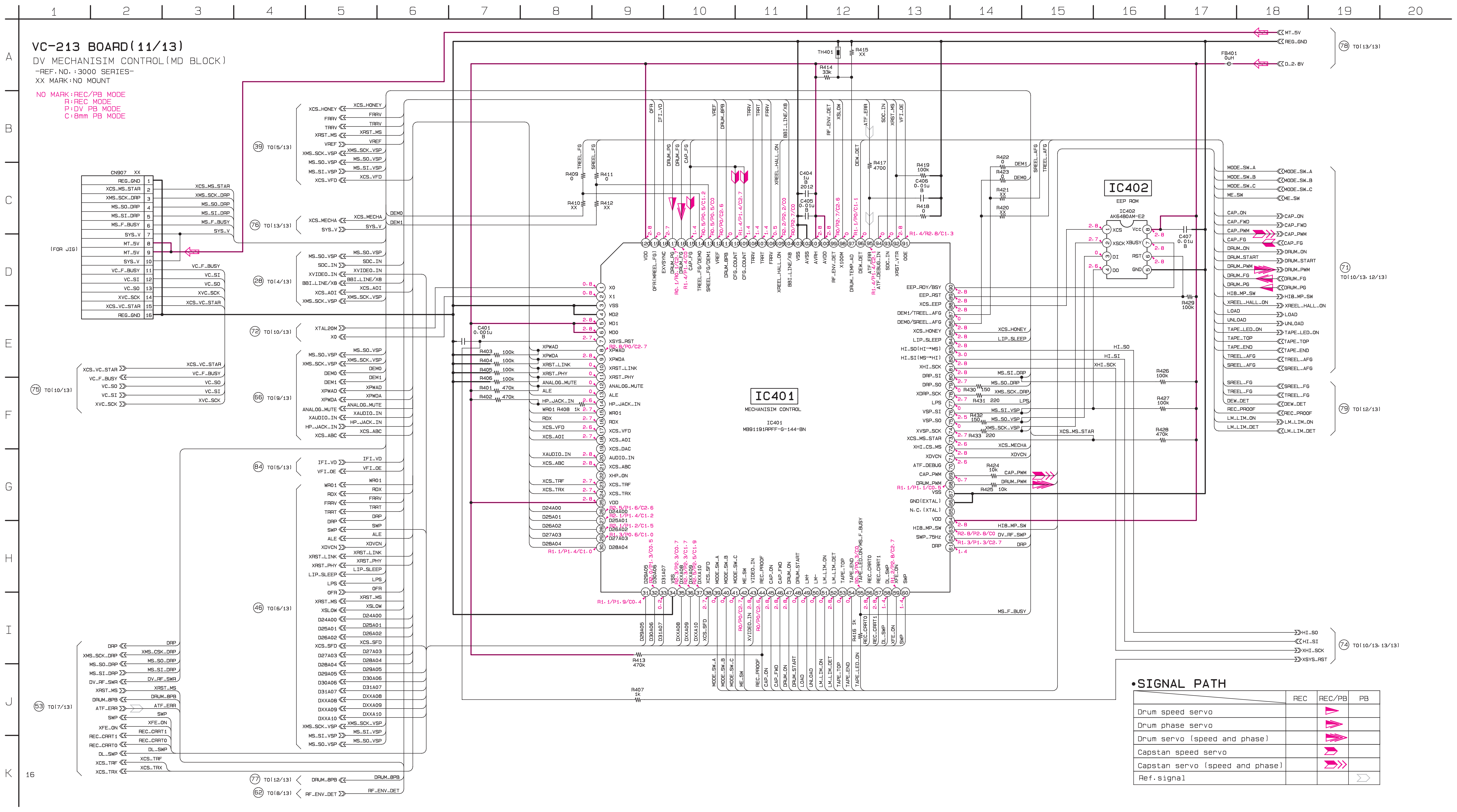
•SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶▷	
Drum servo (speed and phase)		▶▷▷	
Capstan speed servo		➡	
Capstan servo (speed and phase)		➡》	
Ref.signal			▷

* MARKED:MOUNT TABLE

MODEL / REF.NO.	DCR-TRV410	DCR-TRV410E	DCR-TRV510	DCR-TRV510E
R977	47k	56k	100k	100k
R978	100k	68k	47k	22k

For schematic diagram
- Refer to page 4-65 for printed wiring board.

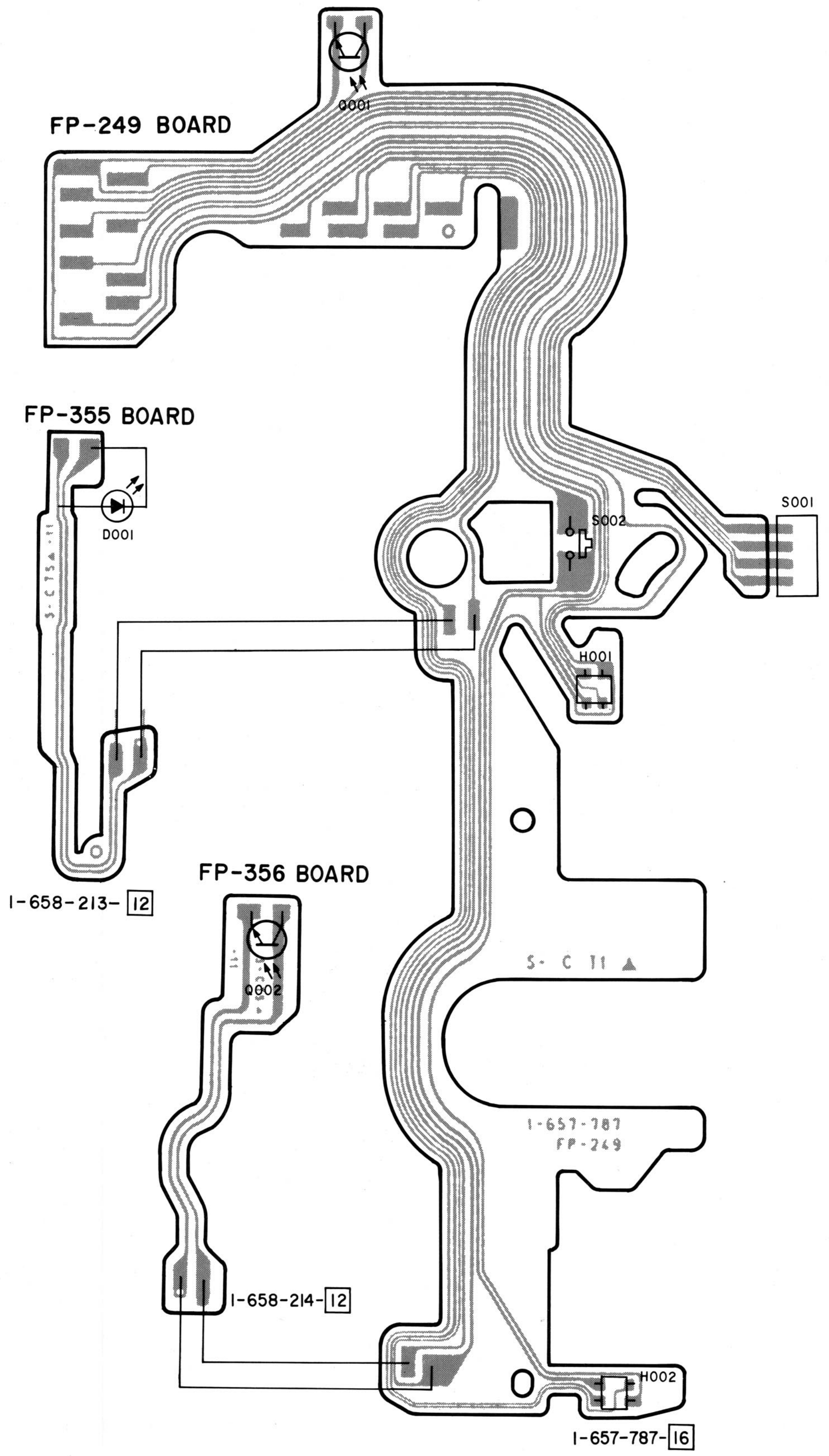

VC-213 BOARD(11/13)
DV MECHANISIM CONTROL(MD BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:DV PB MODE
C:8mm PB MODE
CN907 XX
(FOR JIG)
IC401
MECHANISM CONTROL
IC401
MB91191RPFF-G-144-BN
IC402
EEP ROM
IC402
AK6480AM-E2
TO(5/13)
TO(13/13)
TO(4/13)
TO(10/13)
TO(9/13)
TO(6/13)
TO(7/13)
TO(12/13)
TO(8/13)
TO(10/13,12/13)
TO(10/13,13/13)
HI_SO
HI_SI
XHI_SCK
XSYS_RST

•SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶»	
Drum servo (speed and phase)		▶»»	
Capstan speed servo		➤	
Capstan servo (speed and phase)		➤»»	
Ref.signal			⟩

FP-249 (S/T REEL SENSOR), FP-356 (TOP SENSOR), FP-355 (TAPE LED) FLEXIBLE BOARD

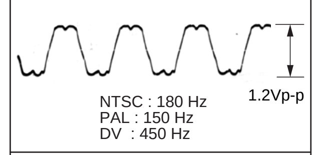
— Ref. No. FP-249, 356, 355 FLEXIBLE board; 20,000 series —


FP-249 BOARD
Q001
FP-355 BOARD
D001
S001
S002
H001
FP-356 BOARD
Q002
1-658-213-12
1-657-787
FP-249
1-658-214-12
H002
1-657-787-16

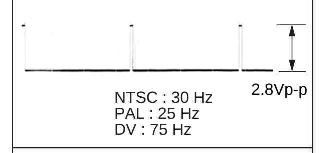
VC-213 BOARD (12/13)

CAMERA REC/PB

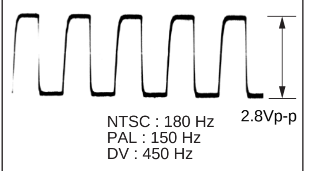
㉗ IC451 ①,②,㉙



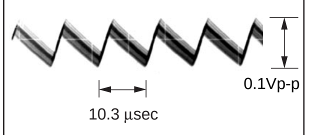
㉘ IC451 ⑪



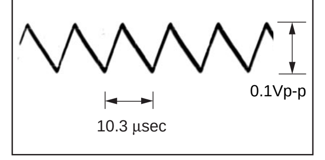
㉙ IC451 ⑱



㉚ IC452 ⑦

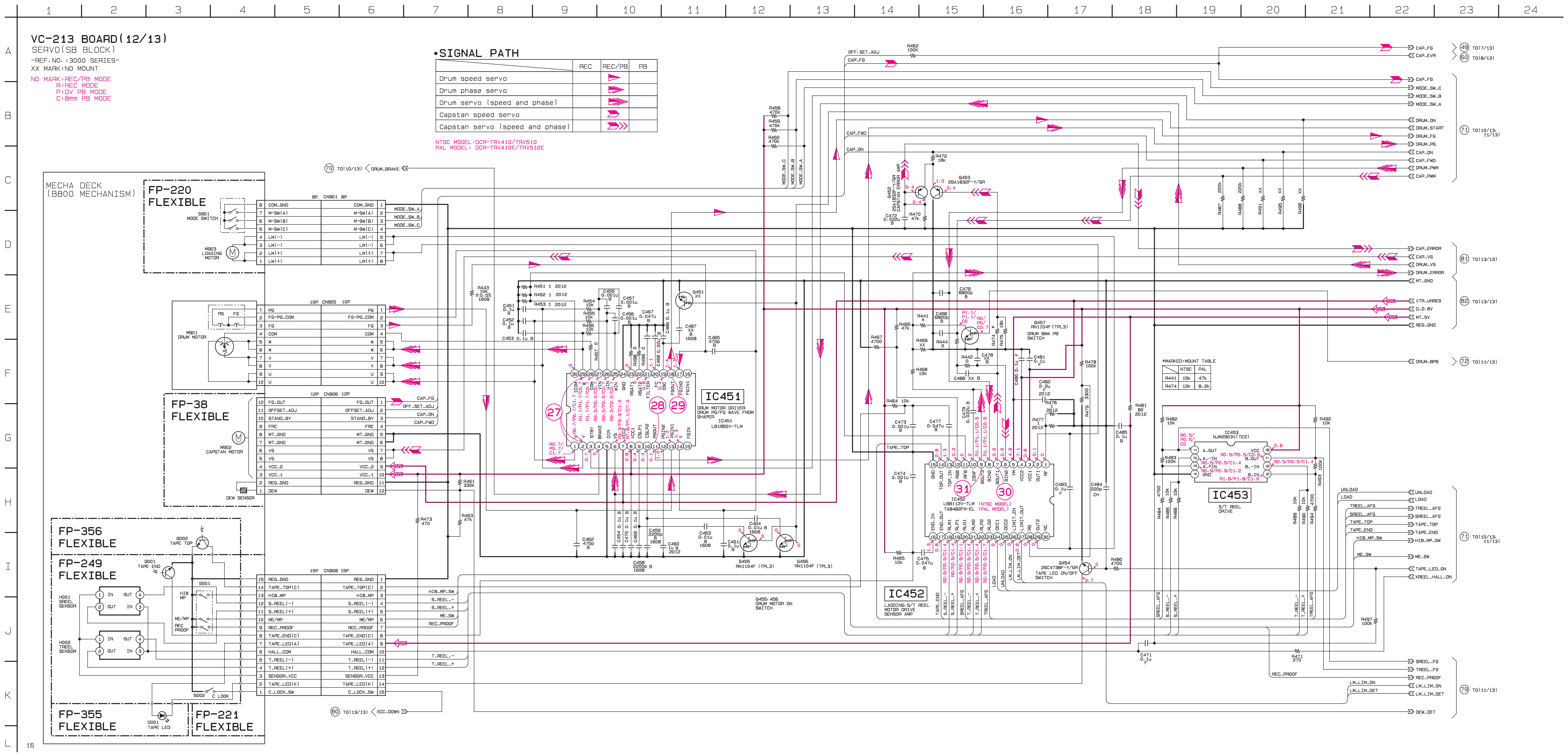


㉛ IC452 ⑨



For schematic diagram

- Refer to page 4-65 for printed wiring board.

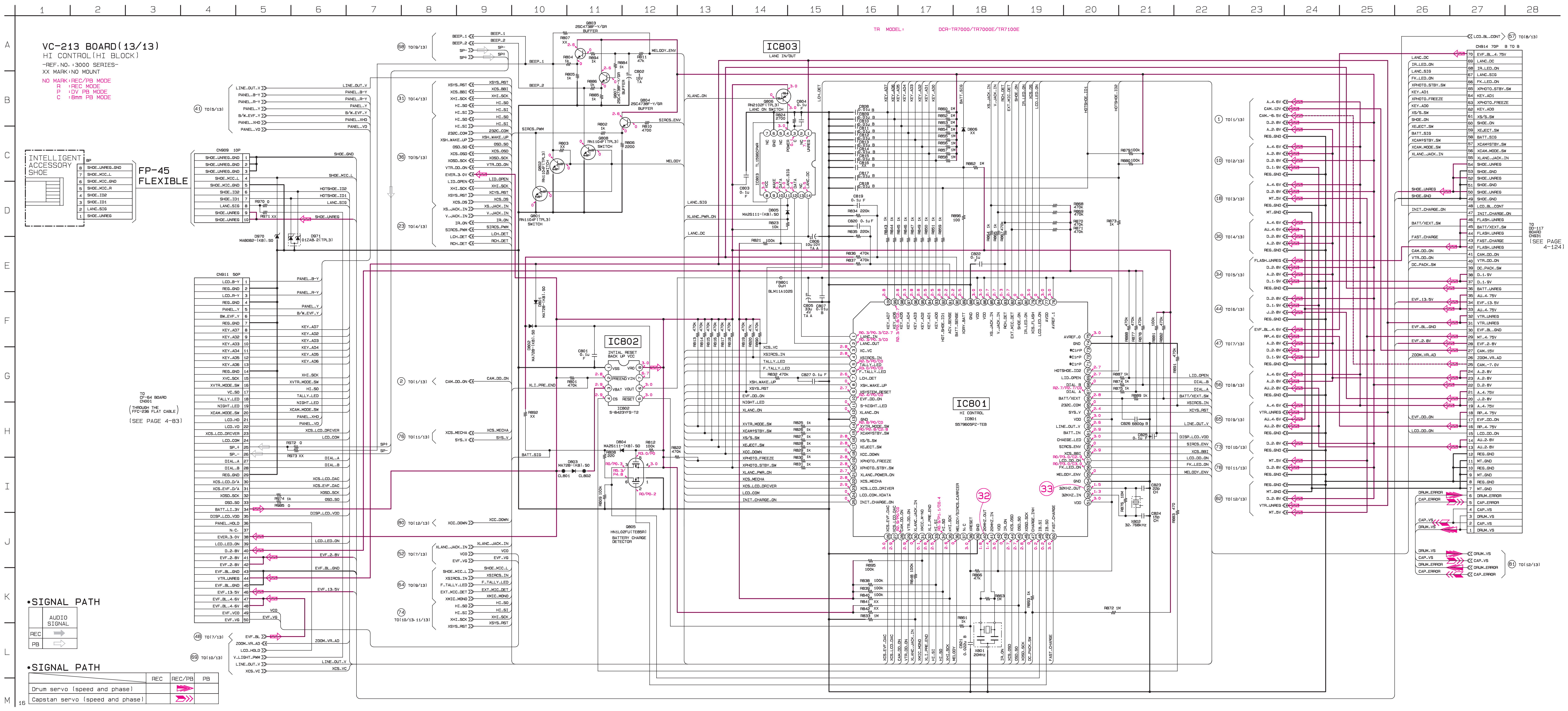

VC-213 BOARD(12/13)
SERVO(SB BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:DV PB MODE
C:8mm PB MODE
NTSC MODEL:DCR-TRV410/TRV510
PAL MODEL: DCR-TRV410E/TRV510E
MECHA DECK (B800 MECHANISM)
FP-220 FLEXIBLE
S901 MODE SWITCH
M903 LOADING MOTOR
M901 DRUM MOTOR
FP-38 FLEXIBLE
M902 CAPSTAN MOTOR
DEW SENSOR
FP-356 FLEXIBLE
Q002 TAPE TOP
FP-249 FLEXIBLE
Q001 TAPE END
H001 SREEL SENSOR
H002 TREEL SENSOR
FP-355 FLEXIBLE
D001 TAPE LED
FP-221 FLEXIBLE
S002 C LOCK
IC451
DRUM MOTOR DRIVER DRUM PG/FG WAVE FROM SHAPER
IC451 LB1950V-TLM
IC452
LOADING·S/T REEL MOTOR DRIVE SENSOR AMP
IC452 LB8112V-TLM (NTSC MODEL) TA8482FN-EL (PAL MODEL)
IC453
S/T REEL DRIVE
IC453 NJM2903V(TE2)
Q453 2SA1832F-Y/GR
Q455-456 DRUM MOTOR ON SWITCH
Q457 RN1104F(TPL3) DRUM 8mm PB SWITCH
Q454 2SC4738F-Y/GR TAPE LED ON/OFF SWITCH
*MARKED:MOUNT TABLE
TO(10/13)
TO(11/13)
TO(13/13)
TO(7/13)
TO(8/13)

•SIGNAL PATH

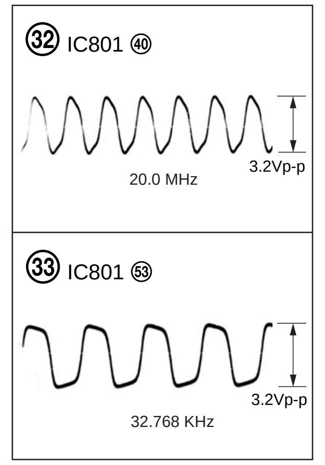
	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷	
Drum servo (speed and phase)		▷	
Capstan speed servo		▷	
Capstan servo (speed and phase)		▷	

	NTSC	PAL
R441	15k	47k
R474	12k	8.2k

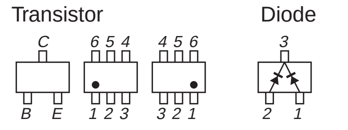
For schematic diagram
- Refer to page 4-65 for printed wiring board.


VC-213 BOARD(13/13)
HI CONTROL(HI BLOCK)
-REF.NO.:3000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :DV PB MODE
C :8mm PB MODE
TR MODEL: DCR-TR7000/TR7000E/TR7100E
INTELLIGENT ACCESSORY SHOE
FP-45 FLEXIBLE
CN909 10P
CN911 50P
CN914 70P
TO CF-64 BOARD CN001 (THROUGH THE FFC-236 FLAT CABLE) (SEE PAGE 4-83)
TO DD-117 BOARD CN931 (SEE PAGE 4-124)
IC801
HI CONTROL
IC801
S579605PZ-TEB
IC802
INTIAL RESET BACK UP VCC
IC802
S-8423YFS-T2
IC803
LANC IN/OUT
TL1596CPWR
Q801
RN1104F(TPL3)
SWITCH
Q802
RN1104F(TPL3)
SWITCH
Q803
2SC4738F-Y/GR
BUFFER
Q804
2SC4738F-Y/GR
BUFFER
Q805
HN1L02FU(TE85R)
BATTERY CHARGE DETECTOR
Q806
RN2102F(TPL3)
LANC ON SWITCH
Q807
2SC4738F-Y/GR
BUFFER
Q808
RN1104F(TPL3)
SWITCH
D801 MA728-(K8).SO
D802 MA728-(K8).SO
D803 MA728-(K8).SO
D804 MA2S111-(K8).SO
D805 MA2S111-(K8).SO
D970 MA8082-(K8).SO
D971 01ZA8.2(TPL3)
X801 20MHz
X802 32.768KHz
FB801 0uH BLM11A102S
32
33
TO(1/13)
TO(2/13)
TO(3/13)
TO(4/13)
TO(5/13)
TO(6/13)
TO(7/13)
TO(8/13)
TO(9/13)
TO(10/13)
TO(11/13)
TO(12/13)
•SIGNAL PATH
AUDIO SIGNAL
REC
PB
•SIGNAL PATH
REC
REC/PB
PB
Drum servo (speed and phase)
Capstan servo (speed and phase)
A B C D E F G H I J K L M
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
16

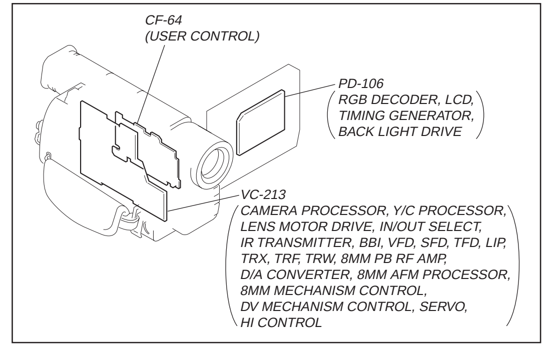
VC-213 BOARD (13/13)
CAMERA REC/PB



For printed wiring boards
- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
- Chip parts



There are few cases that the part printed on this diagram isn't mounted in this model.


CF-64
(USER CONTROL)
PD-106
RGB DECODER, LCD,
TIMING GENERATOR,
BACK LIGHT DRIVE
VC-213
CAMERA PROCESSOR, Y/C PROCESSOR,
LENS MOTOR DRIVE, IN/OUT SELECT,
IR TRANSMITTER, BBI, VFD, SFD, TFD, LIP,
TRX, TRF, TRW, 8MM PB RF AMP,
D/A CONVERTER, 8MM AFM PROCESSOR,
8MM MECHANISM CONTROL,
DV MECHANISM CONTROL, SERVO,
HI CONTROL

VC-213 BOARD (SIDE A)

C101	A-3
C102	B-3
C103	B-3
C104	B-3
C105	A-3
C106	C-3
C107	A-4
C108	B-4
C109	B-4
C110	C-5
C111	C-5
C112	B-4
C113	C-5
C114	B-4
C115	B-4
C116	B-4
C117	B-4
C118	B-5
C119	B-4
C120	B-4
C121	B-5
C122	B-5
C123	B-5
C126	B-5
C127	B-5
C129	B-5
C140	C-5
C142	C-5
C144	B-5
C145	B-5
C146	B-5
C147	B-5
C148	B-5
C309	C-4
C311	C-4
C323	A-3
C351	E-4
C352	D-6
C353	C-5
C354	C-5
C355	D-4
C356	D-4
C357	D-4
C451	A-6
C452	A-6
C453	A-6
C454	B-6
C455	B-6
C456	B-6
C457	B-6
C458	B-7
C459	B-7
C460	B-6
C461	B-6
C462	B-6
C464	B-6
C465	B-6
C467	B-6
C468	B-6
C469	B-6
C470	B-7
C471	A-8
C484	A-9
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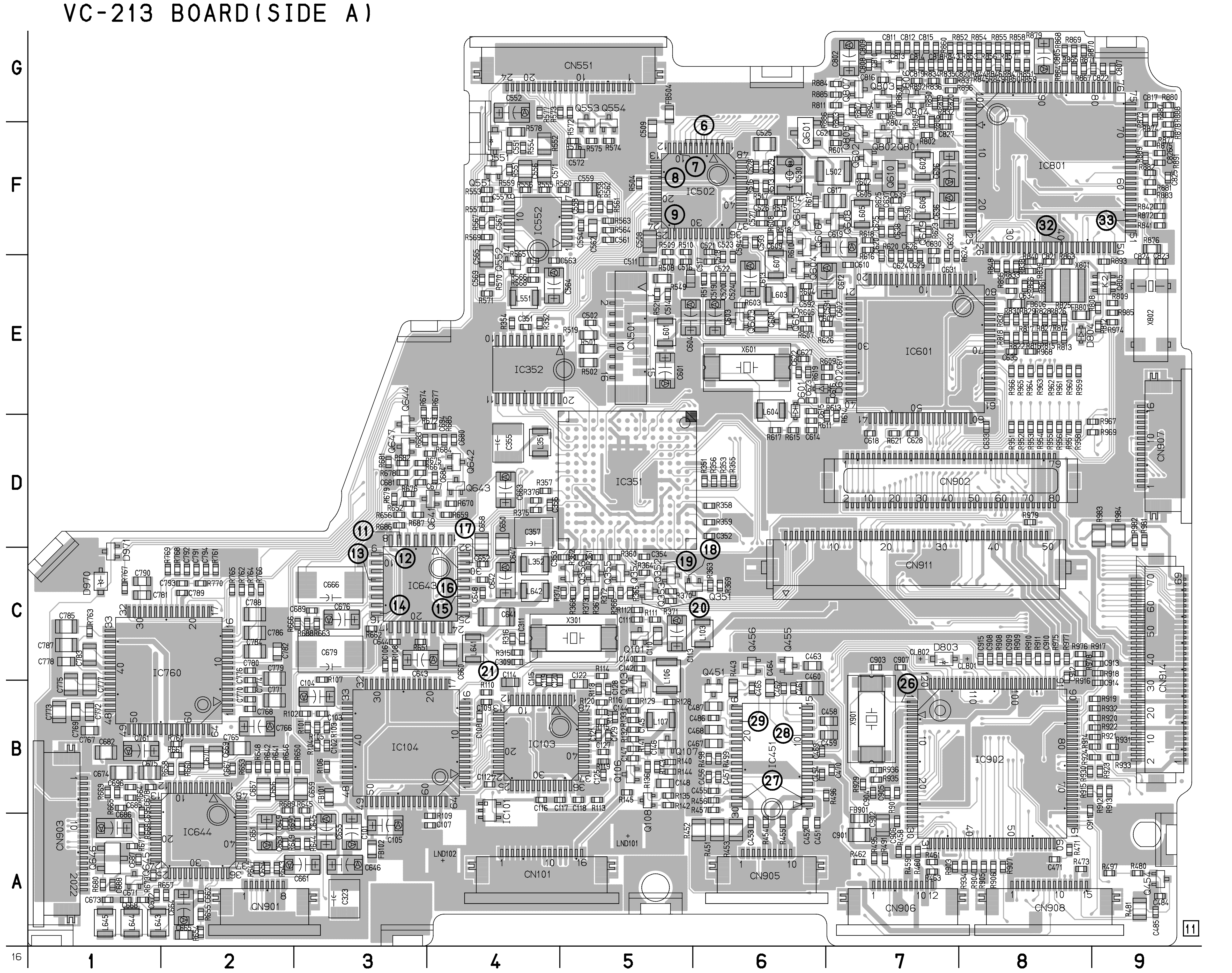
R984	D-9
R985	E-9
RB504	G-5
X301	C-5
X601	E-6
X801	E-8
X802	E-9
X901	B-7

CAMERA PROCESSOR, Y/C PROCESSOR, BBI, LENS DRIVE, VFD, SFD, TRF, 8MM PROCESSOR, DV/8MM MECHA CONTROL, HI CONTROL

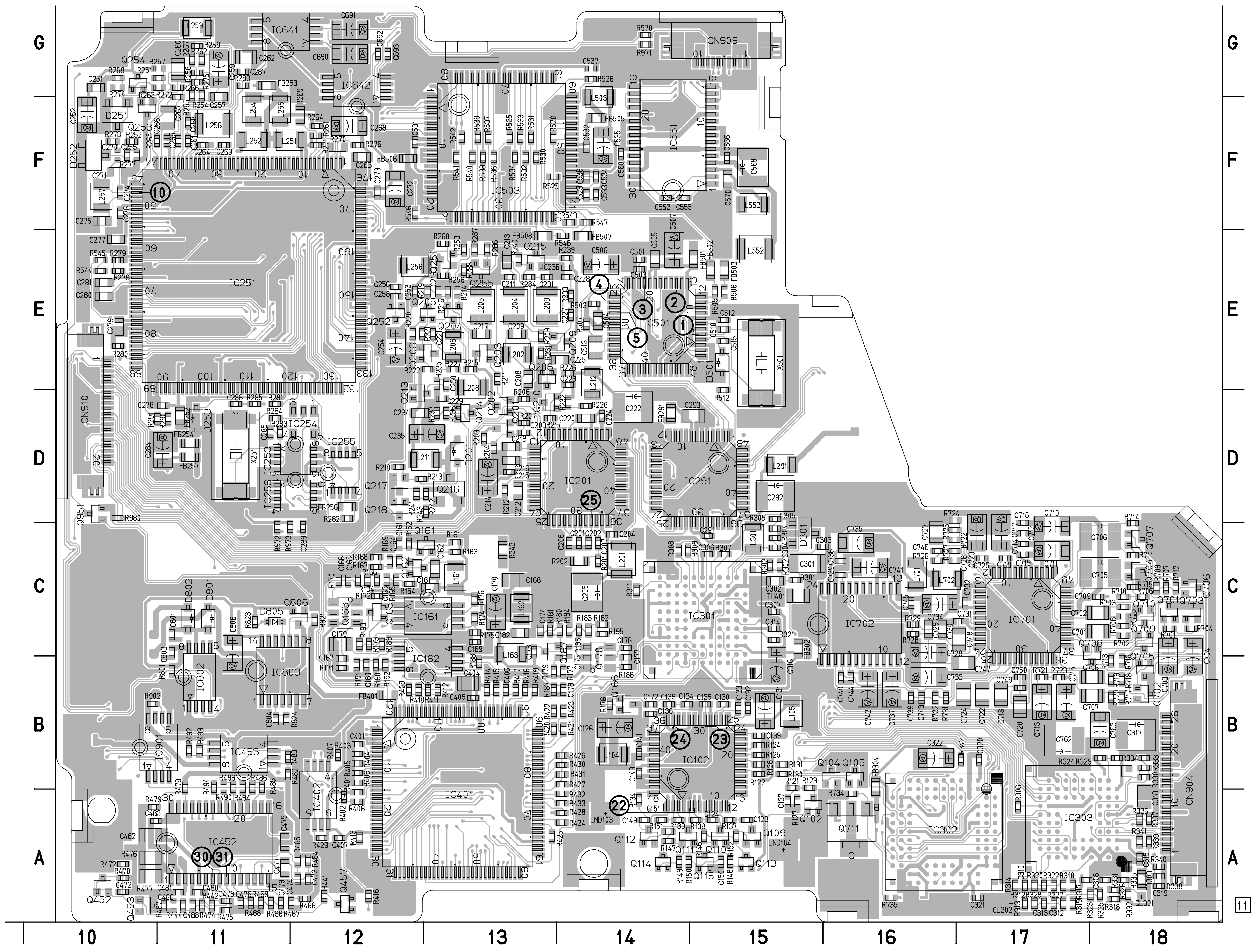
VC-213

VC-213 (CAMERA PROCESSOR, Y/C PROCESSOR, LENS MOTOR DRIVE, IN/OUT SELECT, IR TRANSMITTER, BASE BAND INPUT, VFD, SFD, TFD, LIP, TRX, TRW, 8MM PB RF AMP, D/A CONVERTER, 8MM AFM PROCESSOR, 8MM MECHANISM CONTROL, DV MECHANISM CONTROL, SERVO, HI CONTROL) PRINTED WIRING BOARD

— Ref. No. VC-213 Board; 3,000 Series —



VC-213 BOARD(SIDE B)



VC-213 BOARD (SIDE B)

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L209	E-13
L211	D-13
L212	E-14
L251	F-12
L252	F-11
L253	G-11
L254	G-11
L255	G-11
L256	E-12
L257	F-10
L258	F-11
L291	D-15
L301	C-15
L503	G-14
L552	F-15
L553	F-15
L701	C-16
L702	C-16
Q102	A-15
Q104	B-16
Q105	B-16
Q109	A-15
Q110	A-15
Q111	A-14
Q112	A-14
Q113	A-15
Q114	A-14
Q115	A-15
Q161	C-13
Q162	C-12
Q163	C-12
Q165	C-12
Q166	B-14
Q167	C-13
Q170	B-14
Q201	D-13
Q202	D-13
Q203	E-13
Q204	E-13
Q205	E-13
Q206	E-13
Q208	E-13
Q209	E-14
Q210	D-13
Q213	D-12
Q214	D-13
Q215	E-13
Q216	D-13
Q217	D-12
Q218	D-12
Q251	E-13
Q252	E-12
Q253	G-10
Q254	G-10
Q255	E-13
Q452	A-10
Q453	A-10
Q457	A-12
Q701	C-18
Q702	B-18
Q703	C-18
Q704	C-18
Q705	B-18
Q706	C-18
Q707	C-18
Q708	B-18
Q709	C-18
Q710	C-18
Q711	A-16
Q806	C-12
Q951	D-10
R121	A-15
R122	B-15
R123	A-15
R124	B-15
R125	B-15
R126	B-15
R127	A-15
R130	B-15
R131	B-15
R134	A-14
R137	A-15
R138	A-15
R139	A-14
R146	A-15
R147	A-14
R149	A-14
R150	A-15
R151	A-14
R152	A-15
R161	C-13
R162	C-12
R163	C-13
R164	C-12
R165	C-12
R166	C-12
R167	C-12
R168	C-12
R169	C-12
R170	C-12
R171	B-12
R172	C-12
R173	C-12
R174	C-13
R175	C-13
R176	C-13
R177	B-14
R178	B-14
R179	B-13
R180	C-14
R181	C-13
R182	C-14
R183	C-14
R184	C-14
R185	C-14
R186	B-14
R187	B-13
R189	C-12
R190	B-12
R191	B-12
R192	B-12
R193	C-12
R194	C-12
R195	C-14
R201	C-14
R202	C-14
R203	D-13
R204	D-13
R207	D-13
R208	D-13
R209	E-13
R210	D-12
R211	E-13
R212	D-13
R213	D-12
R214	E-13
R215	E-13
R216	E-13
R217	D-13
R219	E-13
R220	E-12
R221	E-13
R222	E-13
R226	E-14
R227	E-13
R228	D-14
R231	E-13
R232	D-14
R233	E-14
R234	E-13
R235	E-13
R236	D-13
R237	D-13
R239	E-14
R240	E-13
R241	D-12
R242	D-13
R243	D-13
R252	F-10
R253	F-13
R254	G-11
R255	G-11
R256	E-13
R258	G-11
R259	G-11
R260	F-13
R262	G-11
R264	F-12
R265	F-11
R266	G-11
R267	G-11
R269	G-12
R270	F-12
R271	F-12
R272	G-11
R273	F-10
R275	G-11
R276	F-12
R277	F-10
R278	E-10
R279	E-10
R280	E-10
R281	D-11
R282	D-12
R283	D-11
R284	D-11
R285	D-11
R286	F-13
R287	F-13
R288	E-13
R289	G-11
R290	D-11
R291	D-11
R301	C-15
R302	C-15
R303	C-15
R304	C-15
R305	C-15
R306	A-17
R307	C-15
R308	C-14
R309	C-14
R310	A-17
R311	C-14
R312	A-17
R313	A-17
R314	A-17
R318	A-18
R319	A-17
R320	A-17
R321	C-15
R322	A-17
R323	A-18
R324	B-18
R325	A-18
R326	A-18
R327	A-17
R328	A-17
R329	B-18
R330	B-18
R331	A-18
R332	A-18
R333	B-18
R334	B-18
R335	A-18
R336	A-18
R337	A-18
R338	A-18
R339	A-18
R340	A-18
R341	A-18
R343	C-13
R401	A-12
R403	B-12
R404	B-12
R405	B-12
R406	B-12
R407	B-12
R408	A-12
R409	B-12
R410	B-12
R411	B-13
R412	B-13
R413	A-12
R414	B-13
R415	B-13
R416	A-12
R417	B-13
R418	B-13
R419	B-13
R420	B-13
R421	B-14
R422	B-13
R423	B-14
R424	A-14
R425	A-13
R426	B-14
R428	A-14
R429	A-12
R430	B-14
R431	B-14
R432	A-14
R433	A-14
R441	A-12
R442	A-11
R444	A-11
R464	A-12
R465	A-12
R466	A-12
R467	A-12
R468	A-11
R469	A-11
R470	A-10
R472	A-10
R474	A-11
R475	A-11
R476	A-10
R477	A-10
R478	B-11
R479	A-10
R482	B-11
R483	B-11
R484	B-11
R486	B-11
R487	A-11
R488	A-11
R489	B-11
R490	B11
R492	B-11
R493	B-11
R494	B-11
R503	E-14
R505	E-15
R506	E-15
R507	E-14
R512	D-15
R520	F-13
R523	F-14
R525	F-13
R526	G-14
R530	F-13
R531	F-13
R532	F-13
R533	F-13
R534	F-13
R535	F-13
R537	F-13
R538	F-13
R539	F-13
R540	F-13
R541	F-13
R542	F-13
R543	F-14
R544	E-10
R545	E-10
R546	F-12
R547	F-14
R548	F-14
R624	B-11
R642	C-17
R701	C-18
R702	C-18
R703	C-18
R704	C-18
R705	C-18
R706	C-18
R707	C-18
R708	C-18
R709	C-18
R710	C-18
R711	C-18
R712	C-18
R713	B-18
R714	C-18
R715	C-18
R716	B-18
R717	B-18
R718	B-18
R719	B-18
R720	B-18
R721	C-17
R722	C-16
R723	B-17
R724	C-16
R725	C-16
R726	C-16
R727	C-16
R728	C-16
R729	C-16
R731	B-16
R732	B-16
R734	A-16
R801	B-11
R802	B-10
R821	C-12
R823	C-11
R970	G-14
R971	G-14
R972	C-11
R973	C-12
R980	D-10
TH401	C-15
X251	D-11
X501	E-15

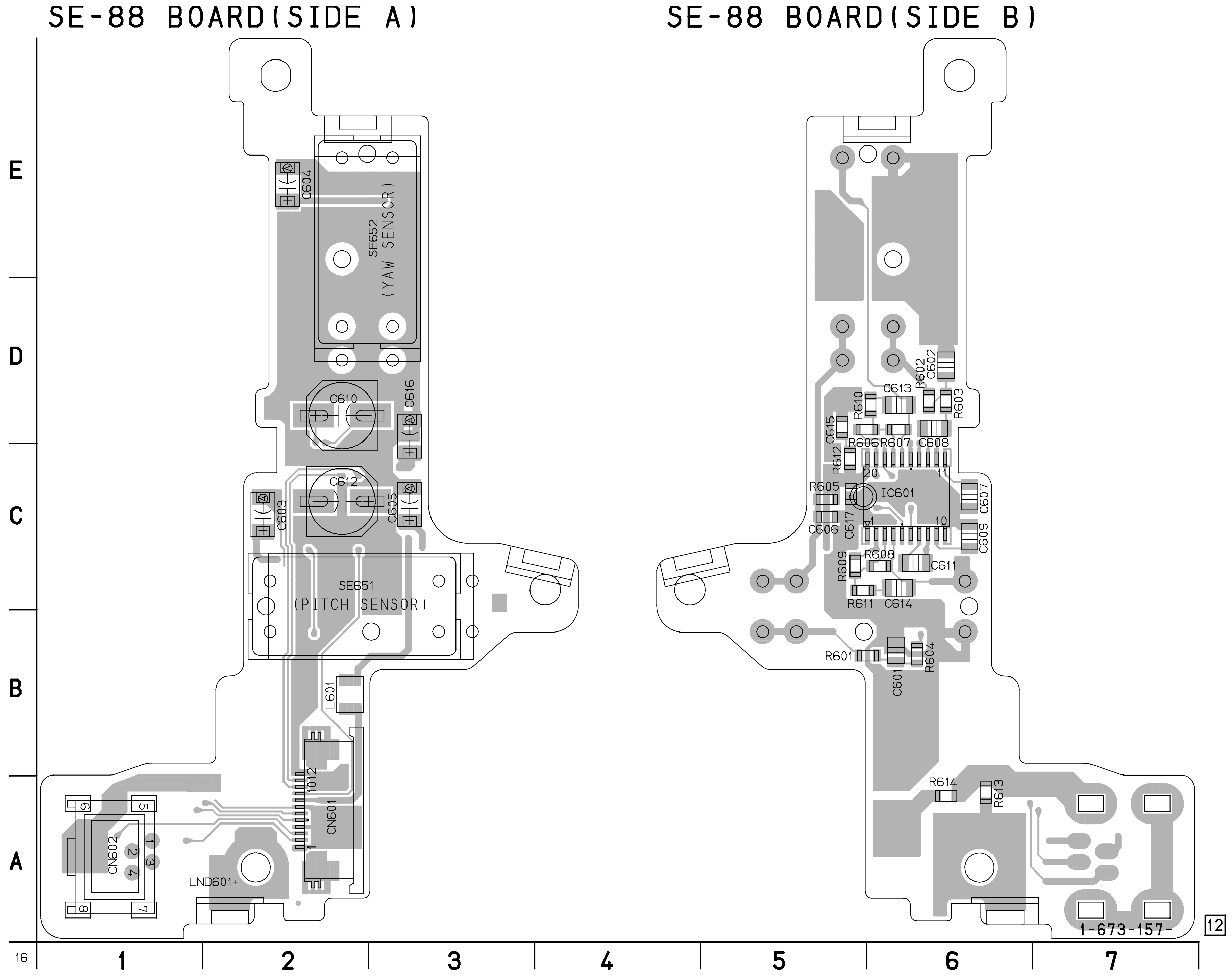
CAMERA PROCESSOR, Y/C PROCESSOR, BBI, LENS DRIVE, VFD, SFD, TRF, 8MM PROCESSOR, DV/8MM MECHA CONTROL, HI CONTROL
VC-213

SE-88 (STEADY SHOT), PJ-97 (AV IN/OUT) PRINTED WIRING BOARDS

— Ref. No. SE-88, PJ-97 Board; 7,000 Series —

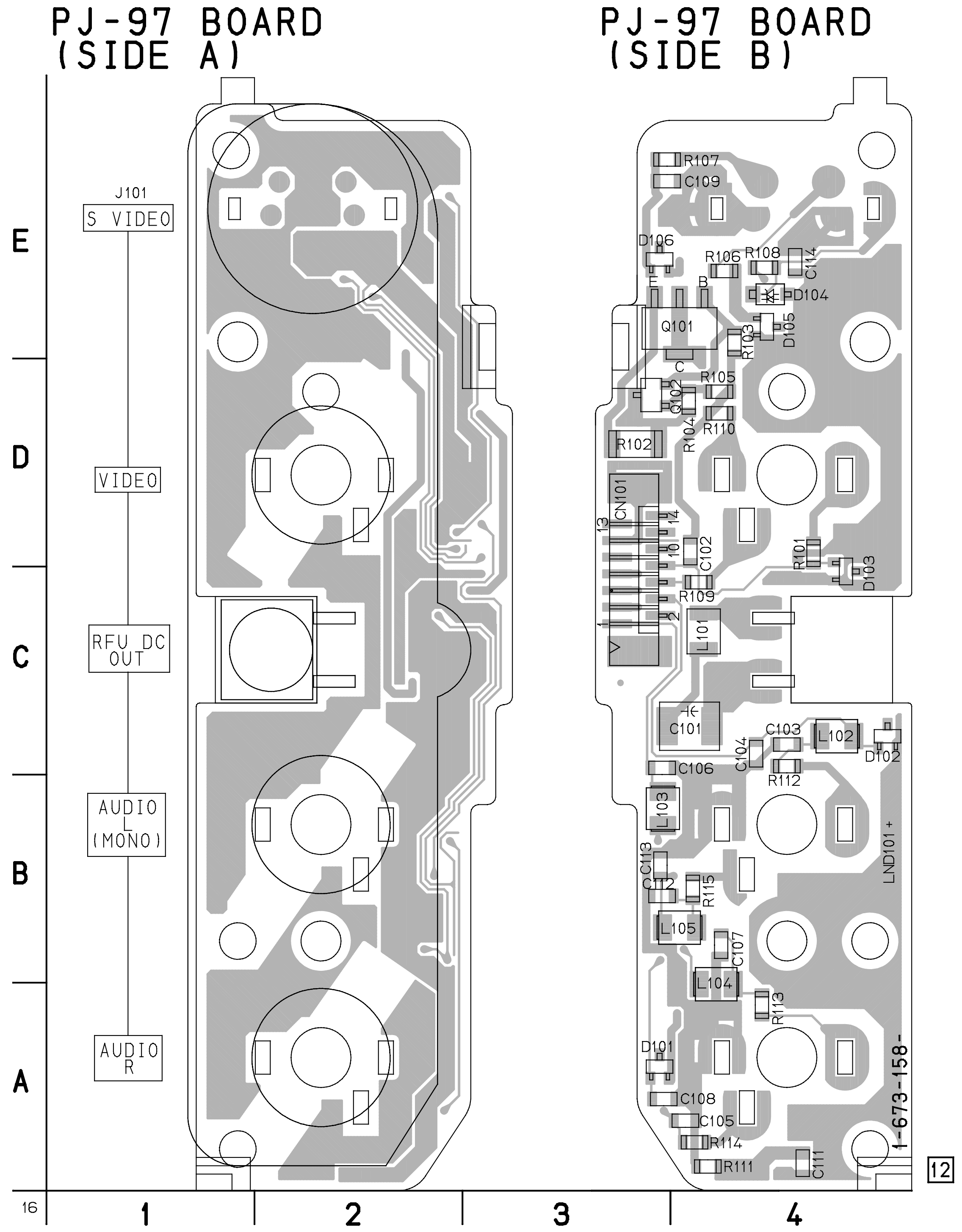
SE-88 BOARD

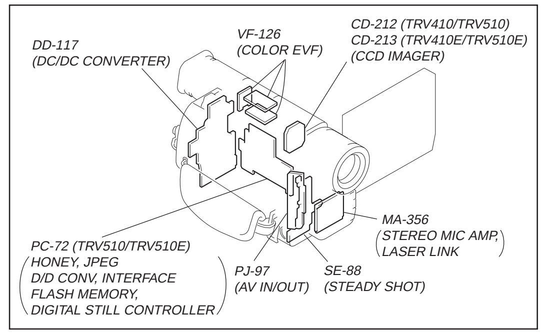
C601	B-5
C602	D-6
C603	C-2
C604	E-2
C605	C-3
C606	C-5
C607	C-6
C608	D-6
C609	C-6
C610	D-2
C611	C-6
C612	C-2
C613	D-6
C614	C-5
C615	D-5
C616	D-3
CN601	A-2
CN602	A-1
IC601	C-6
L601	B-2
R601	B-5
R602	D-6
R603	D-6
R604	B-6
R605	C-5
R607	D-5
R608	D-5
R609	C-5
R610	D-5
R611	C-5
R612	C-5
R613	A-6
R614	A-6
SE651	B-2
SE652	E-2


SE-88 BOARD(SIDE A)
SE-88 BOARD(SIDE B)
SE652 (YAW SENSOR)
SE651 (PITCH SENSOR)
C604
C610
C616
C612
C603
C605
L601
CN601
CN602
LND601+
C602
R602
R603
C613
R610
C615
R606
R607
C608
R612
R605
IC601
C607
C606
C617
C609
R609
R608
C611
R611
C614
R601
R604
C601
R614
R613
1-673-157-
12
E
D
C
B
A
16
1
2
3
4
5
6
7

PJ-97 BOARD

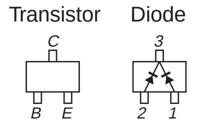
C101	C-3
C102	D-3
C103	C-4
C104	C-4
C105	A-3
C106	C-3
C107	B-4
C108	A-3
C109	E-3
C110	E-3
C111	A-4
C112	B-3
C113	B-3
CN101	C-3
D101	A-3
D102	C-4
D103	C-4
D104	E-4
D105	E-4
D106	E-3
D107	E-4
J001	E-1
L101	C-3
L102	C-4
L103	B-3
L104	A-4
L105	B-3
Q101	E-3
Q102	D-3
R101	D-4
R102	D-3
R103	E-4
R104	D-3
R105	D-4
R106	E-4
R107	E-3
R108	E-4
R109	C-3
R110	D-4
R111	A-3
R112	C-4
R113	A-4
R114	A-3
R115	B-3


PJ-97 BOARD (SIDE A)
PJ-97 BOARD (SIDE B)
J101
S VIDEO
VIDEO
RFU DC OUT
AUDIO L (MONO)
AUDIO R
R107
C109
D106
R106
R108
C114
D104
Q101
R103
D105
Q102
R105
R104
R110
R102
CN101
C102
R101
D103
R109
L101
C101
C103
L102
D102
C104
C106
R112
L103
C113
C112
R115
LND101+
L105
C107
L104
R113
D101
C108
C105
R114
R111
C111
1-673-158-
12
E
D
C
B
A
16
1
2
3
4

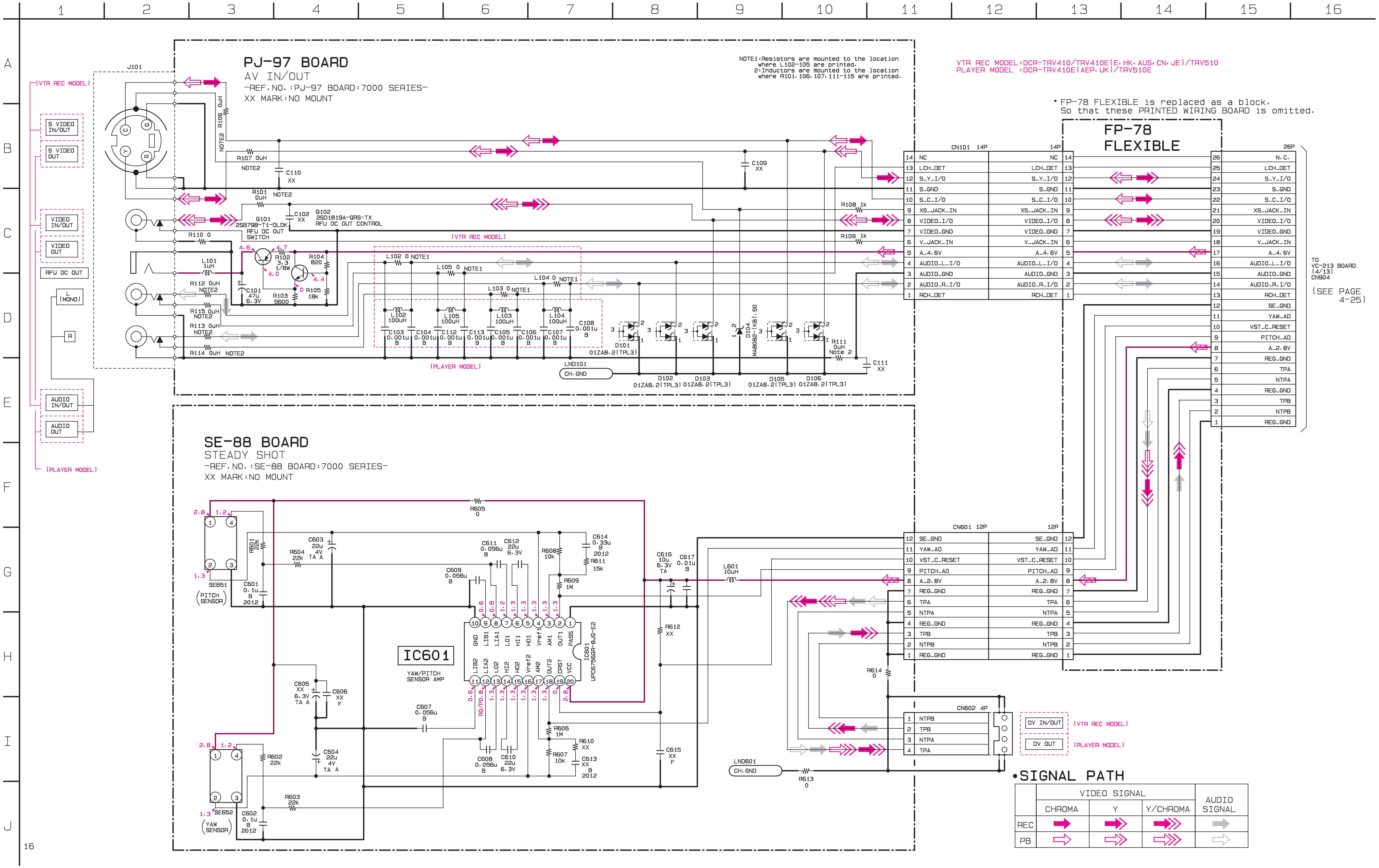

DD-117 (DC/DC CONVERTER)
VF-126 (COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
MA-356 (STEREO MIC AMP, LASER LINK)
PC-72 (TRV510/TRV510E) HONEY, JPEG D/D CONV, INTERFACE FLASH MEMORY, DIGITAL STILL CONTROLLER
PJ-97 (AV IN/OUT)
SE-88 (STEADY SHOT)

For printed wiring boards

- Chip parts


Transistor
C
B
E
Diode
3
2
1

There are few cases that the part printed on this diagram isn't mounted in this model.


PJ-97 BOARD
AV IN/OUT
-REF. NO. : PJ-97 BOARD : 7000 SERIES-
XX MARK : NO MOUNT
NOTE1 : Resistors are mounted to the location where L102-105 are printed.
2 : Inductors are mounted to the location where R101, 106, 107, 111-115 are printed.
VTR REC MODEL : DCR-TRV410/TRV410E(E, HK, AUS, CN, JE)/TRV510
PLAYER MODEL : DCR-TRV410E(AEP, UK)/TRV510E
• FP-78 FLEXIBLE is replaced as a block.
So that these PRINTED WIRING BOARD is omitted.
FP-78
FLEXIBLE
J101
(VTR REC MODEL)
S VIDEO IN/OUT
S VIDEO OUT
VIDEO IN/OUT
VIDEO OUT
RFU DC OUT
L (MONO)
R
AUDIO IN/OUT
AUDIO OUT
(PLAYER MODEL)
Q101 2SB798-T1-DLDK RFU DC OUT SWITCH
Q102 2SD1819A-QRS-TX RFU DC OUT CONTROL
CN101 14P
CN904
TO VC-213 BOARD (4/13) CN904
(SEE PAGE 4-25)
LND101 CH. GND
D101 01ZA8.2(TPL3)
D102 01ZA8.2(TPL3)
D103 01ZA8.2(TPL3)
D104 MA8082-(K8).SO
D105 01ZA8.2(TPL3)
D106 01ZA8.2(TPL3)
SE-88 BOARD
STEADY SHOT
-REF. NO. : SE-88 BOARD : 7000 SERIES-
XX MARK : NO MOUNT
IC601
YAW/PITCH SENSOR AMP
IC601 UPC6756GR-8JG-E2
SE651 (PITCH SENSOR)
SE652 (YAW SENSOR)
CN601 12P
CN602 4P
DV IN/OUT (VTR REC MODEL)
DV OUT (PLAYER MODEL)
LND601 CH. GND
16

•SIGNAL PATH

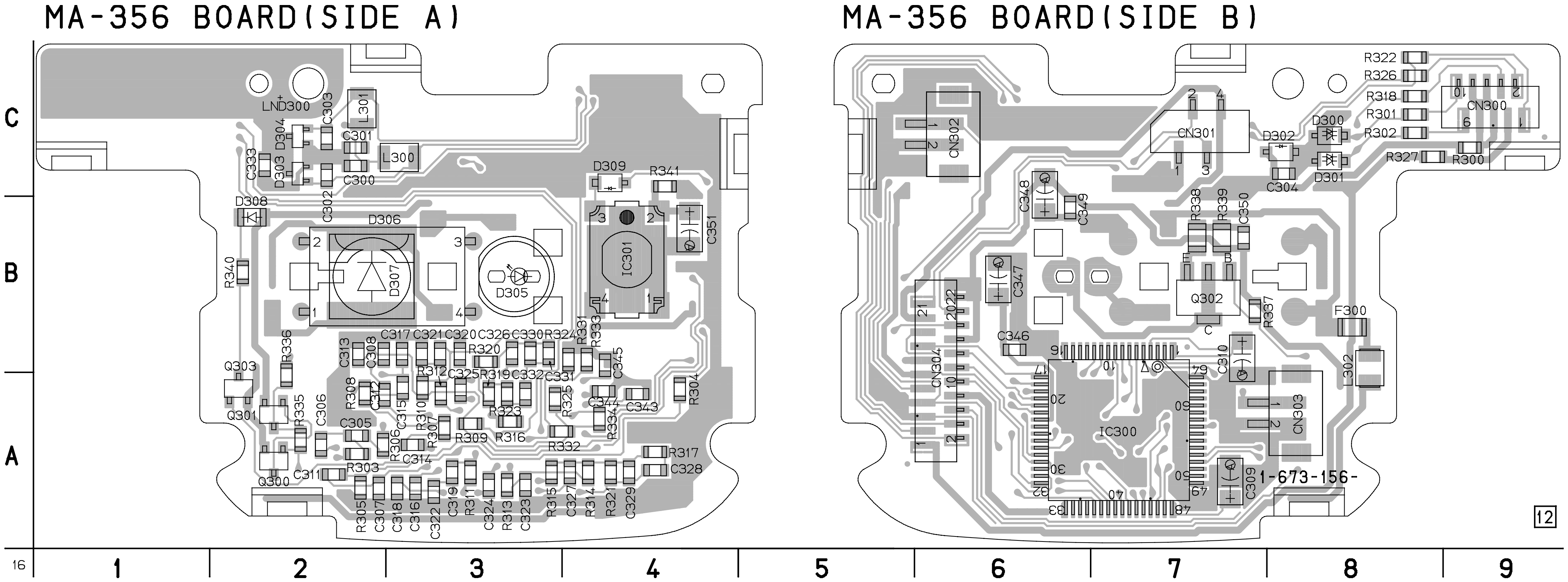
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

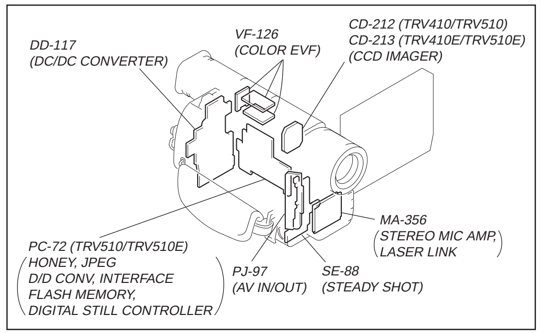
MA-356 BOARD

C300	C-2
C301	C-2
C302	C-2
C303	C-2
C304	C-8
C305	A-2
C306	A-2
C307	A-2
C308	B-2
C309	A-7
C310	B-7
C311	A-2
C312	A-2
C313	B-2
C314	A-3
C315	A-3
C316	A-3
C317	B-3
C318	A-3
C319	A-3
C320	B-3
C321	B-3
C322	A-3
C323	A-3
C324	A-3
C325	A-3
C326	B-3
C327	A-4
C328	A-4
C329	A-4
C330	B-3
C331	B-3
C332	A-3
C333	C-2
C343	A-4
C344	A-4
C345	B-4
C346	B-6
C347	B-6
C348	C-6
C349	B-6
C350	B-7
C351	B-4
CN300	C-9
CN301	C-7
CN302	C-6
CN303	A-8
CN304	B-6
D300	C-8
D301	C-8
D302	C-8
D303	C-2
D304	C-2
D305	B-3
D306	B-2
D307	B-2
D308	B-2
D309	C-4
F300	B-8
IC300	A-7
IC301	B-4
L300	C-3
L301	C-2
L302	B-8
Q300	A-2
Q301	A-2
Q302	B-7
Q303	A-2
R300	C-9
R301	C-8
R302	C-8
R303	A-2
R304	A-4
R305	A-2
R306	A-2
R307	A-3
R308	A-2
R309	A-3
R310	A-3
R311	A-3
R312	A-3
R313	A-3
R314	A-4
R315	A-3
R316	A-3
R317	A-4
R318	C-8
R319	A-3
R320	B-3
R321	A-4
R322	C-8
R323	A-3
R324	B-3
R325	A-3
R326	C-8
R327	C-8
R331	B-4
R332	A-3
R333	B-4
R334	A-4
R335	A-2
R336	A-2
R337	B-7
R338	B-7
R339	B-7
R340	B-2
R341	C-4

MA-356 (STEREO MIC AMP) PRINTED WIRING BOARD

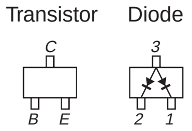
— Ref. No. MA-356 Board; 7,000 Series —


MA-356 BOARD(SIDE A)
MA-356 BOARD(SIDE B)
C
B
A
16
1
2
3
4
5
6
7
8
9
LND300
D304
D303
C333
C303
C302
C301
C300
L301
L300
D308
D306
D307
D305
D309
R341
IC301
C351
R340
R336
Q303
Q301
Q300
R335
C306
C305
C311
R303
R308
C313
C308
C317
C321
C320
C326
C330
R324
R320
R312
C325
R319
C332
C331
R331
R333
C345
R323
R309
R316
R332
C344
C343
R304
R317
C328
R305
C307
C318
C316
C322
C319
R311
C324
R313
C323
R315
C327
R314
R321
C329
CN302
CN301
D302
D300
D301
C304
R322
R326
R318
R301
R302
R327
R300
CN300
C348
C349
R338
R339
C350
C347
CN304
C346
Q302
R337
F300
L302
C310
IC300
CN303
C309
1-673-156-
12

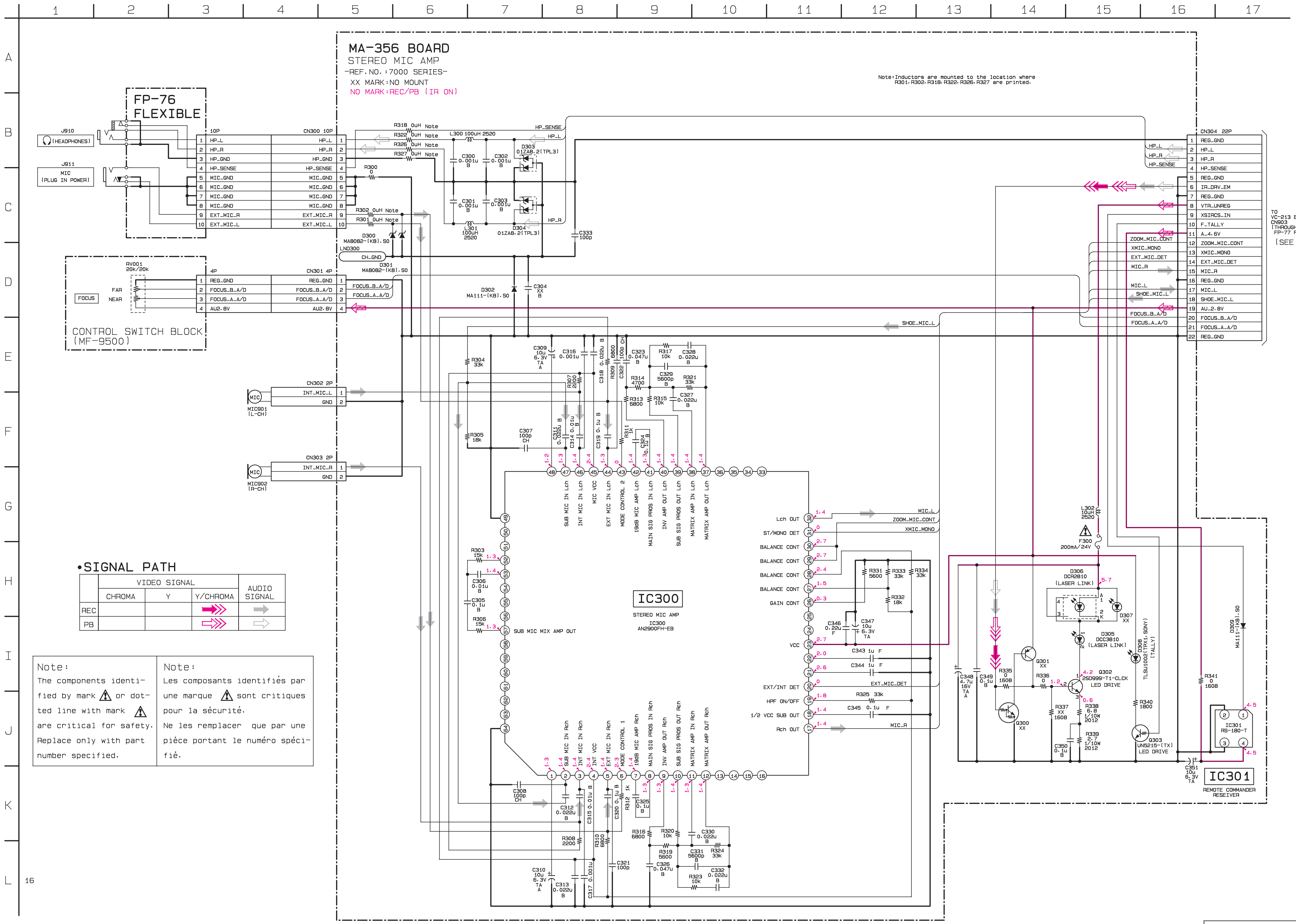

DD-117
(DC/DC CONVERTER)
VF-126
(COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
MA-356
STEREO MIC AMP,
LASER LINK
PC-72 (TRV510/TRV510E)
HONEY, JPEG
D/D CONV, INTERFACE
FLASH MEMORY,
DIGITAL STILL CONTROLLER
PJ-97
(AV IN/OUT)
SE-88
(STEADY SHOT)

For printed wiring boards

- Chip parts


Transistor
Diode
C
B
E
3
2
1

There are few cases that the part printed on this diagram isn't mounted in this model.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H I J K L
MA-356 BOARD
STEREO MIC AMP
-REF.NO.:7000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB (IR ON)
Note:Inductors are mounted to the location where R301,R302,R318,R322,R326,R327 are printed.
FP-76 FLEXIBLE
J910 (HEADPHONES)
J911 MIC (PLUG IN POWER)
CN300 10P
CN301 4P
CN302 2P
CN303 2P
CN304 22P
RV001 20k/20k
FOCUS
FAR
NEAR
CONTROL SWITCH BLOCK (MF-9500)
MIC901 (L-CH)
MIC902 (R-CH)
IC300
STEREO MIC AMP
IC300
AN2900FH-EB
IC301
REMOTE COMMANDER RESEIVER
IC301 RS-180-T
D306 DCR2810 (LASER LINK)
D305 DCC3810 (LASER LINK)
Q302 2SD999-T1-CLCK LED DRIVE
Q303 UN5215-(TX) LED DRIVE
F300 200mA/24V
TO VC-213 BOARD(9/13) CN903 (THROUGH THE FP-77 FLEXIBLE)
(SEE PAGE 4-43)
16

•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

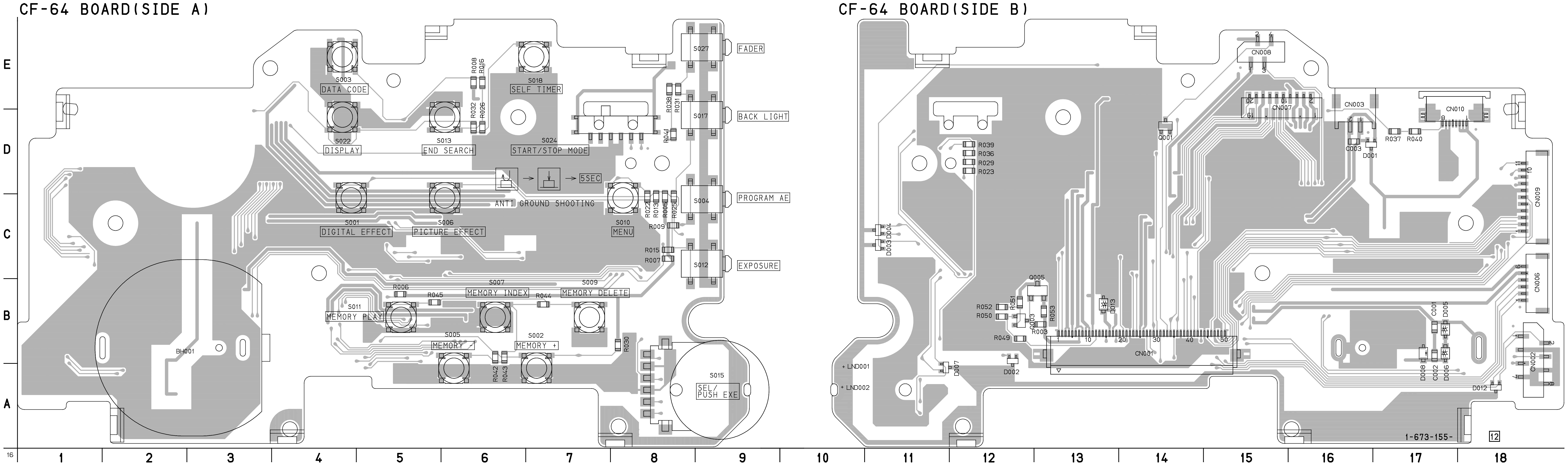
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

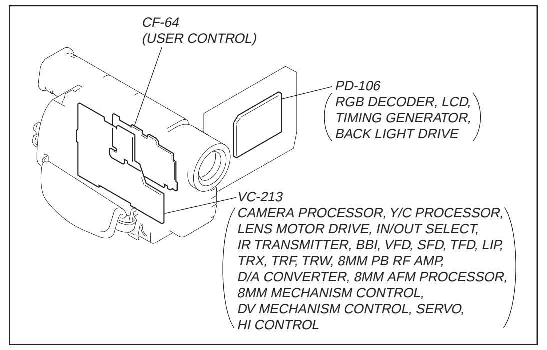
Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

STEREO MIC AMP
MA-356

CF-64 (USER CONTROL) PRINTED WIRING BOARD

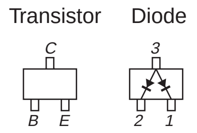
— Ref. No. CF-64 Board; 7,000 Series —


CF-64 BOARD(SIDE A)
CF-64 BOARD(SIDE B)
S003 DATA CODE
S018 SELF TIMER
S022 DISPLAY
S013 END SEARCH
S024 START/STOP MODE
5SEC
ANTI GROUND SHOOTING
S001 DIGITAL EFFECT
S006 PICTURE EFFECT
S010 MENU
S027 FADER
S017 BACK LIGHT
S004 PROGRAM AE
S012 EXPOSURE
S007 MEMORY INDEX
S009 MEMORY DELETE
S011 MEMORY PLAY
S005 MEMORY −
S002 MEMORY +
S015 SEL/PUSH EXE
BH001
CN001
CN002
CN003
CN006
CN007
CN008
CN009
CN010
LND001
LND002
1-673-155-
12
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18


CF-64
(USER CONTROL)
PD-106
RGB DECODER, LCD,
TIMING GENERATOR,
BACK LIGHT DRIVE
VC-213
CAMERA PROCESSOR, Y/C PROCESSOR,
LENS MOTOR DRIVE, IN/OUT SELECT,
IR TRANSMITTER, BBI, VFD, SFD, TFD, LIP,
TRX, TRF, TRW, 8MM PB RF AMP,
D/A CONVERTER, 8MM AFM PROCESSOR,
8MM MECHANISM CONTROL,
DV MECHANISM CONTROL, SERVO,
HI CONTROL

For printed wiring boards

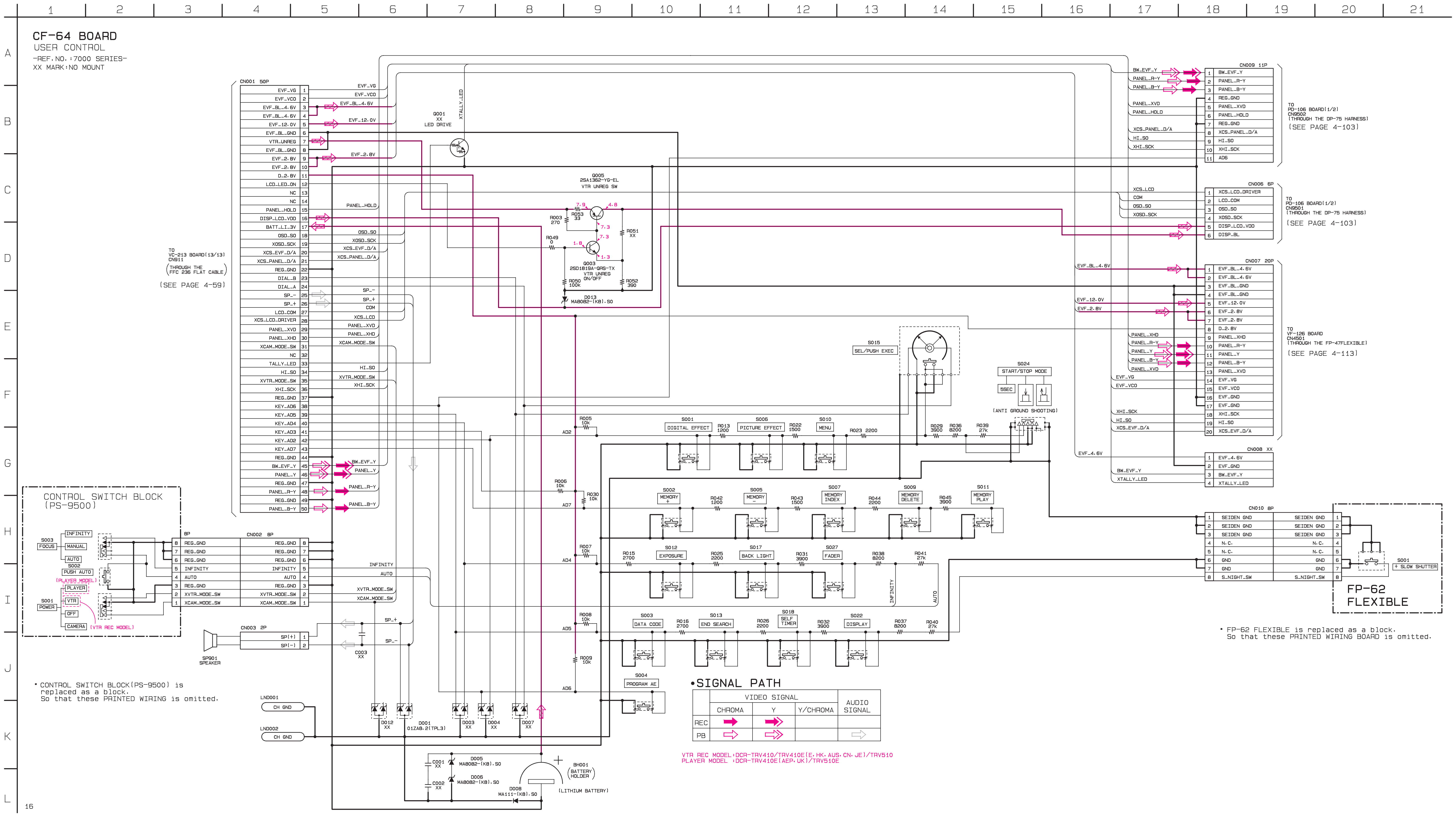
- Chip parts


Transistor
C
B
E
Diode
3
2
1

There are few cases that the part printed on this diagram isn't mounted in this model.

CF-64 BOARD

BH001	B-3	Q001	D-14	R039	D-12	S013	D-6
		Q003	B-12	R040	D-17	S015	A-9
C001	B-17	Q005	B-13	R041	D-8	S017	D-9
C002	B-17			R042	B-6	S018	E-7
C003	D-16	R003	B-13	R043	B-6	S022	D-4
		R005	C-8	R044	B-7	S024	D-8
CN001	B-14	R006	B-5	R045	B-5		
CN002	B-18	R007	C-8	R049	B-12		
CN003	E-16	R008	E-6	R050	B-12		
CN006	B-18	R009	C-8	R051	B-12		
CN007	E-15	R013	C-8	R052	B-12		
CN008	E-15	R015	C-8	R053	B-13		
CN009	C-18	R016	E-6				
CN010	E-17	R022	C-8	S001	C-4		
		R023	D-12	S002	A-7		
D001	D-16	R025	C-8	S003	E-4		
D002	B-12	R026	D-6	S004	C-9		
D003	C-11	R029	D-12	S005	A-6		
D004	C-11	R030	B-8	S006	C-6		
D006	B-17	R031	E-8	S007	B-6		
D007	A-11	R032	D-6	S009	B-7		
D008	B-17	R036	D-12	S010	C-8		
D012	A-18	R037	D-17	S011	B-5		
D013	B-13	R038	E-8	S012	C-9		


CF-64 BOARD
USER CONTROL
-REF.NO.:7000 SERIES-
XX MARK:NO MOUNT
CN001 50P
TO VC-213 BOARD(13/13) CN911 (THROUGH THE FFC 236 FLAT CABLE) (SEE PAGE 4-59)
CN009 11P
TO PD-106 BOARD(1/2) CN9502 (THROUGH THE DP-75 HARNESS) (SEE PAGE 4-103)
CN006 6P
TO PD-106 BOARD(1/2) CN9501 (THROUGH THE DP-75 HARNESS) (SEE PAGE 4-103)
CN007 20P
TO VF-126 BOARD CN4501 (THROUGH THE FP-47FLEXIBLE) (SEE PAGE 4-113)
CN008 XX
CN010 8P
FP-62 FLEXIBLE
S001 + SLOW SHUTTER
Q001 XX LED DRIVE
Q005 2SA1362-YG-EL VTR UNREG SW
Q003 2SD1819A-QRS-TX VTR UNREG ON/OFF
D013 MA8082-(K8).S0
S015 SEL/PUSH EXEC
S024 START/STOP MODE
5SEC
(ANTI GROUND SHOOTING)
S001 DIGITAL EFFECT
S006 PICTURE EFFECT
S010 MENU
S002 MEMORY +
S005 MEMORY -
S007 MEMORY INDEX
S009 MEMORY DELETE
S011 MEMORY PLAY
S012 EXPOSURE
S017 BACK LIGHT
S027 FADER
S003 DATA CODE
S013 END SEARCH
S018 SELF TIMER
S022 DISPLAY
S004 PROGRAM AE
CONTROL SWITCH BLOCK (PS-9500)
S003 FOCUS
INFINITY
MANUAL
AUTO
S002 PUSH AUTO
(PLAYER MODEL)
PLAYER
S001 POWER
VTR
OFF
CAMERA
(VTR REC MODEL)
CN002 8P
CN003 2P
SP901 SPEAKER
C003 XX
LND001 CH GND
LND002 CH GND
D012 XX
D001 01ZA8.2(TPL3)
D003 XX
D004 XX
D007 XX
C001 XX
C002 XX
D005 MA8082-(K8).S0
D006 MA8082-(K8).S0
D008 MA111-(K8).S0
BH001 (BATTERY HOLDER)
(LITHIUM BATTERY)
16

• CONTROL SWITCH BLOCK(PS-9500) is replaced as a block.
So that these PRINTED WIRING is omitted.

• FP-62 FLEXIBLE is replaced as a block.
So that these PRINTED WIRING BOARD is omitted.

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡		
PB	⇨	⇨		⇨

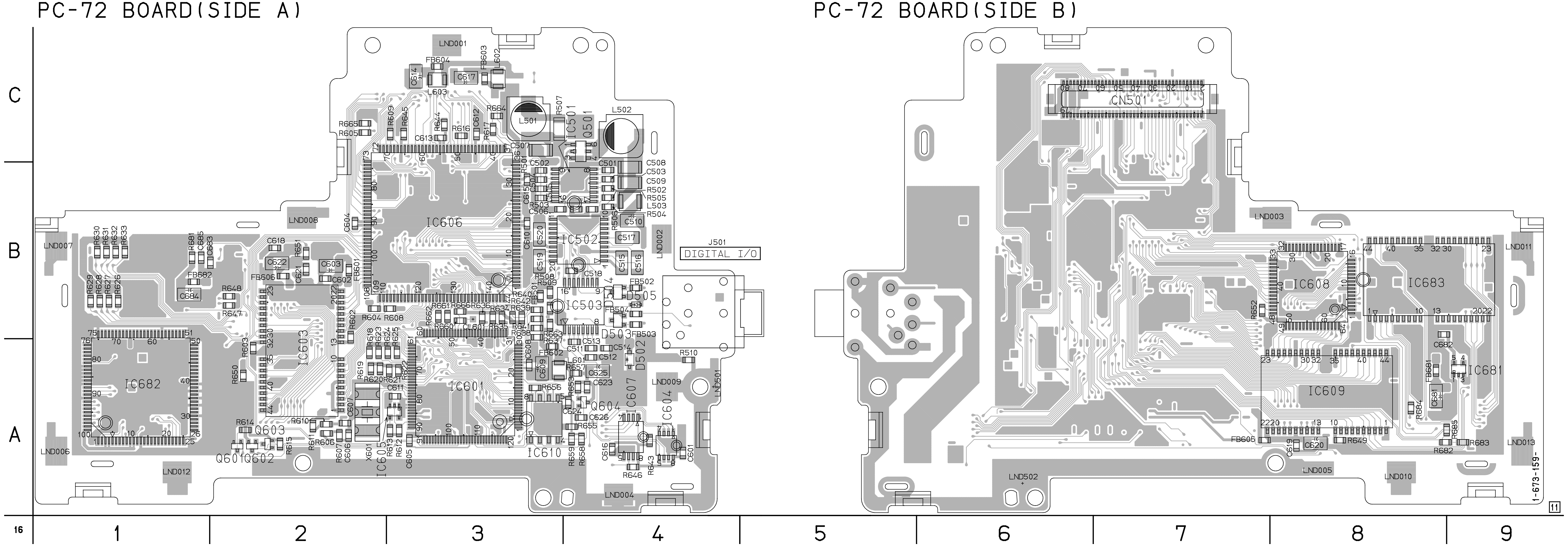
VTR REC MODEL:DCR-TRV410/TRV410E(E,HK,AUS,CN,JE)/TRV510
PLAYER MODEL :DCR-TRV410E(AEP,UK)/TRV510E

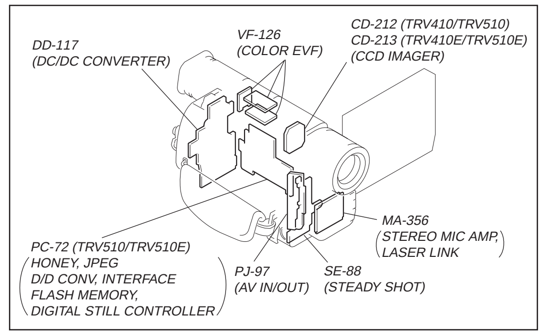
PC-72 BOARD

C501	B-4
C502	B-3
C503	B-4
C503	B-4
C504	B-3
C505	B-3
C506	B-4
C507	C-3
C508	B-4
C509	B-4
C510	B-4
C511	A-4
C512	A-4
C513	A-4
C514	A-4
C515	B-4
C516	B-4
C517	B-4
C519	B-3
C520	B-3
C601	A-4
C602	B-2
C603	B-2
C604	B-2
C605	A-3
C606	A-2
C607	A-2
C608	A-3
C609	A-3
C610	B-3
C611	A-3
C612	C-3
C613	C^3
C614	C-3
C615	B-3
C616	A-4
C617	C-3
C618	B-2
C619	A-8
C620	A-8
C621	B-2
C622	B-2
C623	A-4
C624	A-4
C625	A-4
C626	A-4
C681	A-8
C682	B-8
C683	B-1
C684	B-1
C685	B-1
CN501	C-7
D502	A-4
D503	B-4
D504	B-4
D505	B-4
FB501	B-3
FB502	B-4
FB503	B-4
FB504	B-4
FB601	B-2
FB602	A-3
FB603	C-3
FB604	C-3
FB605	A-7
FB606	B-2
FB681	A-8
FB682	B-1
IC501	B-4
IC502	B-4
IC503	B-4
IC601	A-3
IC603	A-2
IC604	A-4
IC605	A-3
IC606	B-3
IC607	A-4
IC608	B-8
IC609	A-8
IC610	A-3
IC681	A-9
IC682	A-1
IC683	B-8
J501	B-4
L501	C-3
L502	C-4
L503	B-4
L601	A-3
L602	C-3
L603	C-3
Q501	C-4
Q601	A-2
Q602	A-2
Q603	A-2
Q604	A-4
R501	C-3
R502	B-4
R503	B-3
R504	B-4
R505	B-4
R506	B-4
R507	C-3
R508	B-3
R509	B-3
R510	A-4
R602	B-2
R603	A-2
R604	B-2
R605	C-2
R606	A-2
R607	A-2
R608	B-3
R609	C-3
R610	A-2
R611	A-2
R612	A-3
R613	A-3
R614	A-2
R615	A-2
R616	C-3
R617	C-3
R618	A-2
R619	A-2
R620	A-2
R621	A-3
R622	A-3
R623	A-2
R624	A-3
R625	A-3
R626	B-1
R627	B-1
R628	B-1
R629	B-1
R630	B-1
R631	B-1
R632	B-1
R633	B-1
R634	B-3
R635	B-3
R636	B-3
R638	B-3
R639	B-3
R640	B-3
R641	B-3
R642	B-3
R643	A-4
R644	C-3
R645	C-3
R646	A-4
R647	B-2
R648	B-2
R649	A-8
R650	A-2
R651	B-2
R652	B-7
R653	A-4
R655	A-4
R656	A-3
R657	A-4
R658	A-4
R659	A-4
R660	B-3
R661	B-3
R662	B-3
R663	B-3
R664	C-3
R665	C-2
R666	B-3
R681	B-1
R682	A-8
R683	A-9
R684	A-8
R685	A-8
X601	A-2

PC-72 (JPEG, HONEY, SHUTTER, D/D CONV, INTERFACE, FLASH MEMORY) PRINTED WIRING BOARD (TRV510/TRV510E)

— Ref. No. PC-72 Board; 8,000 Series —


PC-72 BOARD(SIDE A)
PC-72 BOARD(SIDE B)
C
B
A
16
1
2
3
4
5
6
7
8
9
IC682
IC603
IC606
IC601
IC610
IC605
IC502
IC503
IC607
IC604
IC501
Q501
L501
L502
Q603
Q601
Q602
Q604
D503
D505
D502
J501
DIGITAL I/O
CN501
IC608
IC683
IC609
IC681
LND001
LND002
LND003
LND004
LND005
LND006
LND007
LND008
LND009
LND010
LND011
LND012
LND013
LND501
LND502
1-673-159-
11


DD-117
(DC/DC CONVERTER)
VF-126
(COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
MA-356
(STEREO MIC AMP, LASER LINK)
PC-72 (TRV510/TRV510E)
(HONEY, JPEG
D/D CONV, INTERFACE
FLASH MEMORY,
DIGITAL STILL CONTROLLER)
PJ-97
(AV IN/OUT)
SE-88
(STEADY SHOT)

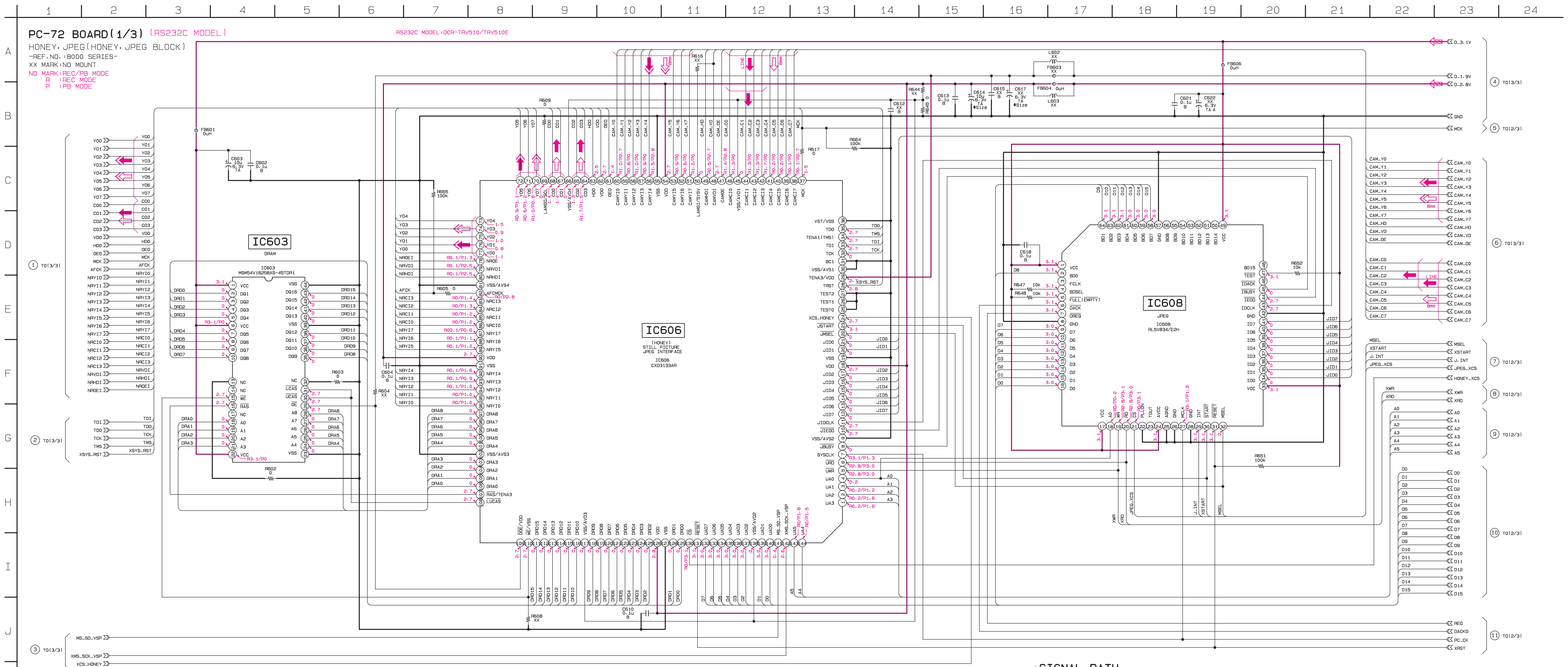
For printed wiring boards

- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

There are few cases that the part printed on this diagram isn't mounted in this model.

PC-72 BOARD(1/3) (RS232C MODEL)

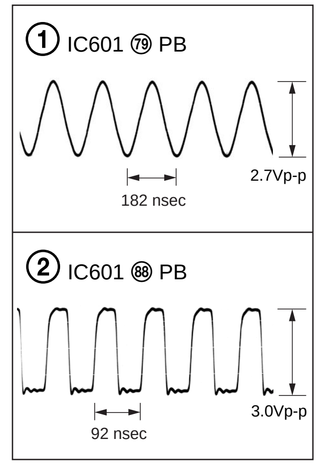
HONEY, JPEG(HONEY, JPEG BLOCK)
-REF.NO.:8000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE


RS232C MODEL:DCR-TRV510/TRV510E
IC603
IC603 MSM54V16258AS-45TDR1
DRAM
IC606
(HONEY)
STILL PICTURE
JPEG INTERFACE
IC606 CXD3133AR
IC608
JPEG
IC608 RL5V834Z/E2H
FB601 0uH
FB603
FB604 0uH
FB606 0uH
L602
L603
D_3.1V
D_1.9V
D_2.8V
GND
MCK
CAM_Y0
CAM_Y1
CAM_Y2
CAM_Y3
CAM_Y4
CAM_Y5
CAM_Y6
CAM_Y7
CAM_HD
CAM_VD
CAM_OE
CAM_C0
CAM_C1
CAM_C2
CAM_C3
CAM_C4
CAM_C5
CAM_C6
CAM_C7
MSEL
XSTART
J_INT
JPEG_XCS
HONEY_XCS
XWR
XRD
A0
A1
A2
A3
A4
A5
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
REQ
DACKO
PC_CK
XRST
MS_SO_VSP
XMS_SCK_VSP
XCS_HONEY
TDI
TDO
TCK
TMS
XSYS_RST
① TO(3/3)
② TO(3/3)
③ TO(3/3)
④ TO(3/3)
⑤ TO(2/3)
⑥ TO(3/3)
⑦ TO(2/3)
⑧ TO(2/3)
⑨ TO(2/3)
⑩ TO(2/3)
⑪ TO(2/3)
16

- SIGNAL PATH

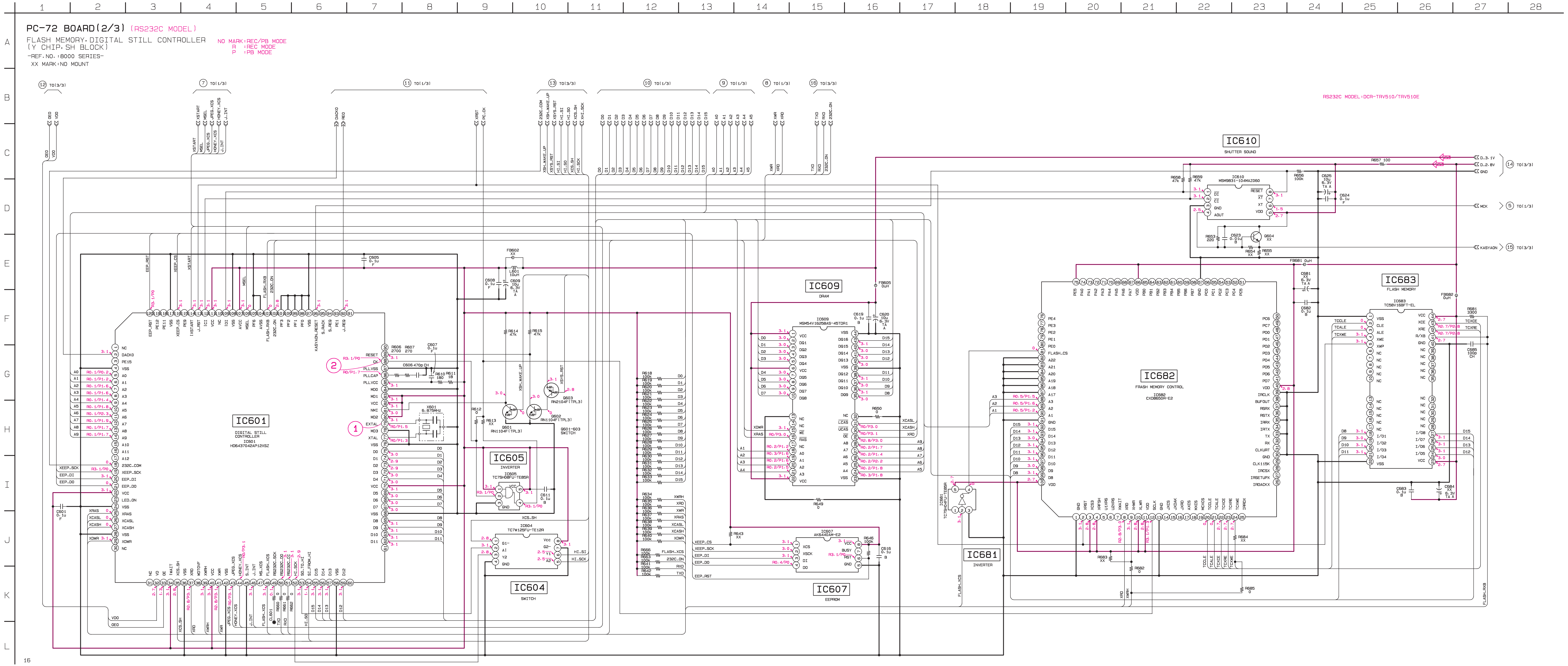
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB	⇨	⇨	

PC-72 BOARD (2/3)



For schematic diagram

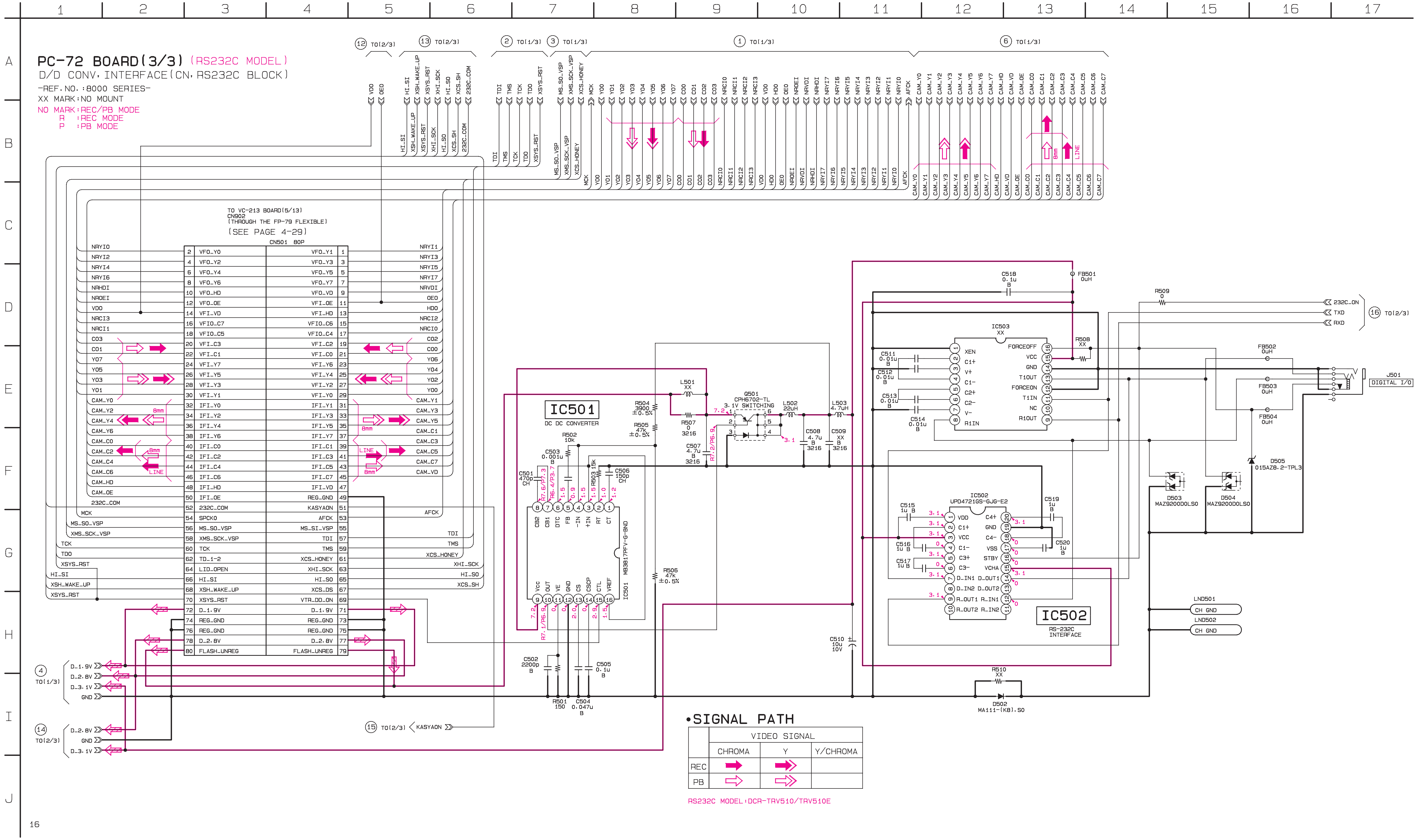
- Refer to page 4-86 for printed wiring board.


PC-72 BOARD(2/3) (RS232C MODEL)
FLASH MEMORY, DIGITAL STILL CONTROLLER
(Y CHIP, SH BLOCK)
-REF.NO.:8000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
RS232C MODEL:DCR-TRV510/TRV510E
IC601
DIGITAL STILL CONTROLLER
IC605
INVERTER
IC604
SWITCH
IC609
DRAM
IC607
EEPROM
IC681
INVERTER
IC682
FLASH MEMORY CONTROL
IC683
FLASH MEMORY
IC610
SHUTTER SOUND
16

DIGI STILL CONT, FLASH MEMORY
PC-72 (2/3)

For schematic diagram

- Refer to page 4-86 for printed wiring board.


PC-72 BOARD(3/3) (RS232C MODEL)
D/D CONV, INTERFACE(CN, RS232C BLOCK)
-REF.NO.:8000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
TO VC-213 BOARD(5/13) CN902 (THROUGH THE FP-79 FLEXIBLE)
(SEE PAGE 4-29)
CN501 80P
IC501
DC DC CONVERTER
IC503
IC502
UPD4721GS-GJG-E2
RS-232C INTERFACE
Q501 CPH6702-TL 3.1V SWITCHING
J501 DIGITAL I/O
D505 02CZ6.2-TPL3
D503 MAZ9200D0LS0
D504 MAZ9200D0LS0
D502 MA111-(K8).S0
LND501 CH GND
LND502 CH GND
TO(1/3)
TO(2/3)
KASYAON
16

•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB	⇨	⇨	

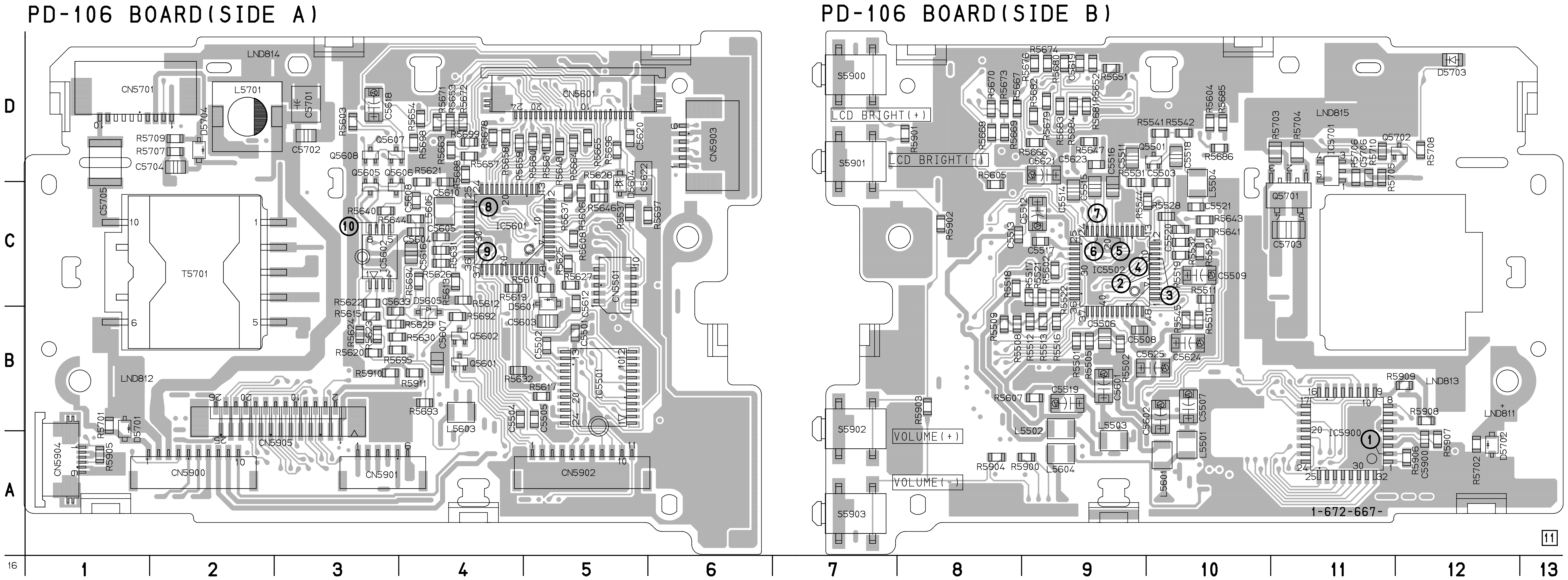
RS232C MODEL:DCR-TRV510/TRV510E

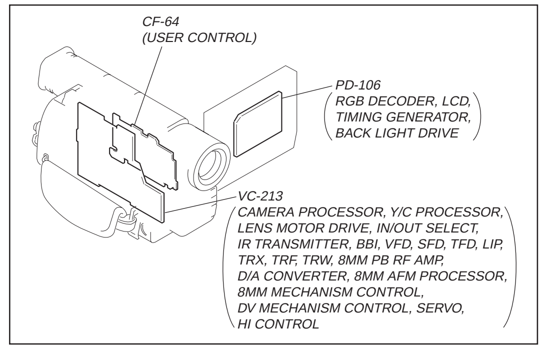
PD-106 BOARD

C5501	B-5
C5502	B-5
C5503	C-10
C5504	B-4
C5505	B-5
C5506	B-9
C5507	B-10
C5508	B-9
C5509	C-10
C5511	D-9
C5512	C-9
C5513	C-8
C5514	C-9
C5515	C-9
C5516	C-9
C5517	C-9
C5518	D-10
C5519	B-9
C5520	C-10
C5521	C-10
C5601	B-9
C5602	B-10
C5603	B-5
C5604	C-4
C5605	C-4
C5607	B-4
C5608	C-4
C5610	C-4
C5612	B-5
C5616	C-4
C5618	D-3
C5619	D-9
C5620	D-5
C5621	D-9
C5622	D-5
C5623	D-9
C5624	B-10
C5625	B-10
C5633	B-3
C5701	D-3
C5702	D-3
C5703	C-11
C5704	D-2
C5705	D-1
C5706	D-11
C5900	A-12
CN5501	C-5
CN5601	D-5
CN5701	D-1
CN5900	A-2
CN5901	A-3
CN5902	A-5
CN5903	D-6
CN5904	A-1
CN5905	B-2
D5601	B-5
D5614	C-5
D5701	A-1
D5702	A-12
D5703	D-12
D5704	D-2
IC5501	B-5
IC5502	C-9
IC5601	C-4
IC5602	C-3
IC5701	D-11
IC5900	A-11
L5501	A-10
L5502	A-9
L5503	A-9
L5504	C-10
L5601	A-10
L5603	B-4
L5604	A-9
L5605	C-4
L5701	D-2
L5906	A-12
Q5501	D-10
Q5601	B-4
Q5602	B-4
Q5605	C-3
Q5606	C-3
Q5607	D-3
Q5608	D-3
Q5701	C11
Q5702	D-12
R5501	B-9
R5502	B-9
R5505	B-9
R5508	B-8
R5509	B-8
R5510	B-10
R5511	C-10
R5512	B-9
R5513	B-9
R5516	B-9
R5517	C-9
R5518	C-8
R5519	C-10
R5520	C-10
R5521	C-9
R5522	C-9
R5523	C-10
R5531	C-9
R5532	C-10
R5537	C-5
R5541	D-10
R5542	D-10
R5544	C-10
R5545	B-10
R5602	C-9
R5603	D-3
R5604	D-10
R5605	C-8
R5606	C-5
R5607	B-9
R5608	C-5
R5610	C-5
R5612	C-4
R5613	C-4
R5615	B-3
R5617	B-5
R5619	C-4
R5620	B-3
R5621	C-4
R5622	B-3
R5623	B-3
R5624	B-3
R5625	C-5
R5626	C-4
R5627	C-5
R5628	C-5
R5629	B-3
R5630	B-3
R5631	C-4
R5632	B-4
R5637	C-5
R5640	C-3
R5641	C-10
R5643	D-5
R5644	C-4
R5646	C-5
R5647	D-9
R5651	D-9
R5652	D-9
R5653	D-4
R5654	D-4
R5657	D-4
R5658	D-4
R5659	D-4
R5660	D-5
R5661	D-5
R5663	D-4
R5664	D-5
R5665	D-5
R5666	D-9
R5667	D-8
R5668	D-8
R5669	D-8
R5670	D-8
R5671	D-4
R5672	D-4
R5673	D-8
R5674	D-9
R5676	D-9
R5678	D-4
R5679	D-9
R5680	D-9
R5681	D-9
R5682	D-9
R5683	D-9
R5684	D-9
R5685	D-10
R5686	D-10
R5688	D-4
R5692	B-4
R5694	C-4
R5695	B-3
R5696	D-5
R5697	C-6
R5698	D-4
R5699	D-4
R5701	B-1
R5702	A-12
R5703	D-11
R5704	D-11
R5705	D-11
R5706	D-11
R5707	D-2
R5709	D-2
R5710	D-11
R5900	A-9
R5901	D-8
R5902	C-8
R5903	B-8
R5904	A-8
R5905	A-1
R5907	A-12
R5908	B-12
R5909	B-12
R5910	B-3
R5911	B-4
S5900	D-7
S5901	D-7
S5902	B-7
S5903	A-7
T5643	C-10
T5701	C-2

PD-106 (RGB DECODER, LCD, TIMING GENERATOR, BACK LIGHT DRIVE) PRINTED WIRING BOARD

— Ref. No. PD-106 Board; 10,000 Series —

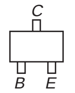

PD-106 BOARD(SIDE A)
PD-106 BOARD(SIDE B)
A
B
C
D
1
2
3
4
5
6
7
8
9
10
11
12
13
16
CN5701
L5701
T5701
LND814
LND812
CN5601
CN5903
CN5904
CN5905
CN5900
CN5901
CN5902
CN5501
IC5601
IC5501
L5603
S5900
S5901
S5902
S5903
LCD BRIGHT(+)
LCD BRIGHT(-)
VOLUME(+)
VOLUME(-)
LND815
LND813
LND811
Q5701
C5703
IC5502
IC5900
D5703
1-672-667-
11


CF-64
(USER CONTROL)
PD-106
RGB DECODER, LCD,
TIMING GENERATOR,
BACK LIGHT DRIVE
VC-213
CAMERA PROCESSOR, Y/C PROCESSOR,
LENS MOTOR DRIVE, IN/OUT SELECT,
IR TRANSMITTER, BBI, VFD, SFD, TFD, LIP,
TRX, TRF, TRW, 8MM PB RF AMP,
D/A CONVERTER, 8MM AFM PROCESSOR,
8MM MECHANISM CONTROL,
DV MECHANISM CONTROL, SERVO,
HI CONTROL

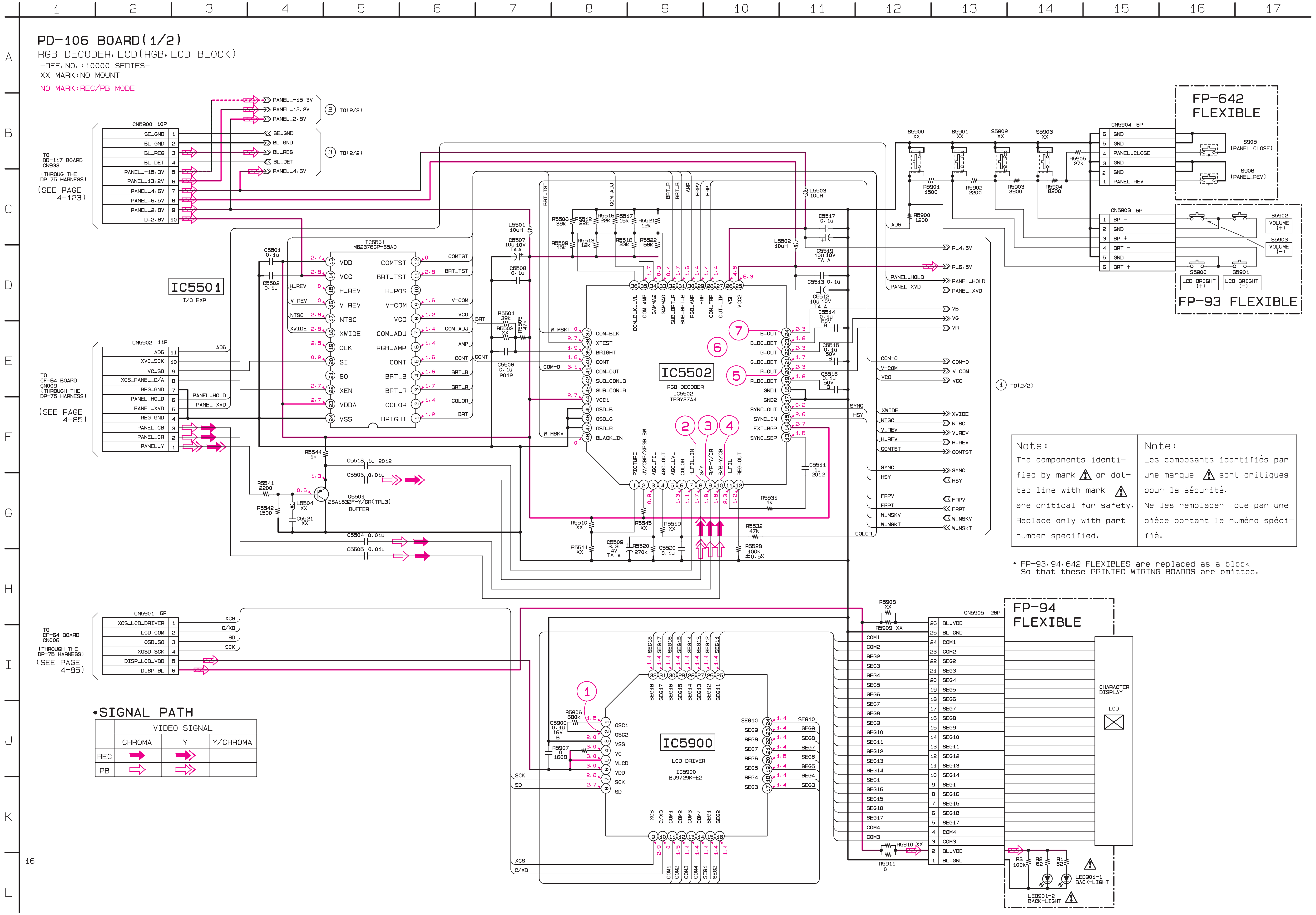
For printed wiring boards

- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

Transistor



There are few cases that the part printed on this diagram isn't mounted in this model.


PD-106 BOARD(1/2)
RGB DECODER, LCD(RGB, LCD BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
IC5501
I/O EXP
IC5501 M62376GP-65AD
IC5502
RGB DECODER IC5502 IR3Y37A4
IC5900
LCD DRIVER IC5900 BU9729K-E2
CN5900 10P
CN5902 11P
CN5901 6P
CN5904 6P
CN5903 6P
CN5905 26P
TO DD-117 BOARD CN933 (THROUGH THE DP-75 HARNESS) (SEE PAGE 4-123)
TO CF-64 BOARD CN009 (THROUGH THE DP-75 HARNESS) (SEE PAGE 4-85)
TO CF-64 BOARD CN006 (THROUGH THE DP-75 HARNESS) (SEE PAGE 4-85)
TO(2/2)
Q5501 2SA1832F-Y/GR(TPL3) BUFFER
FP-642 FLEXIBLE
FP-93 FLEXIBLE
FP-94 FLEXIBLE
S905 (PANEL CLOSE)
S906 (PANEL REV)
S5902 VOLUME (+)
S5903 VOLUME (-)
S5900 LCD BRIGHT (+)
S5901 LCD BRIGHT (-)
CHARACTER DISPLAY
LCD
LED901-1 BACK-LIGHT
LED901-2 BACK-LIGHT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H I J K L
16

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

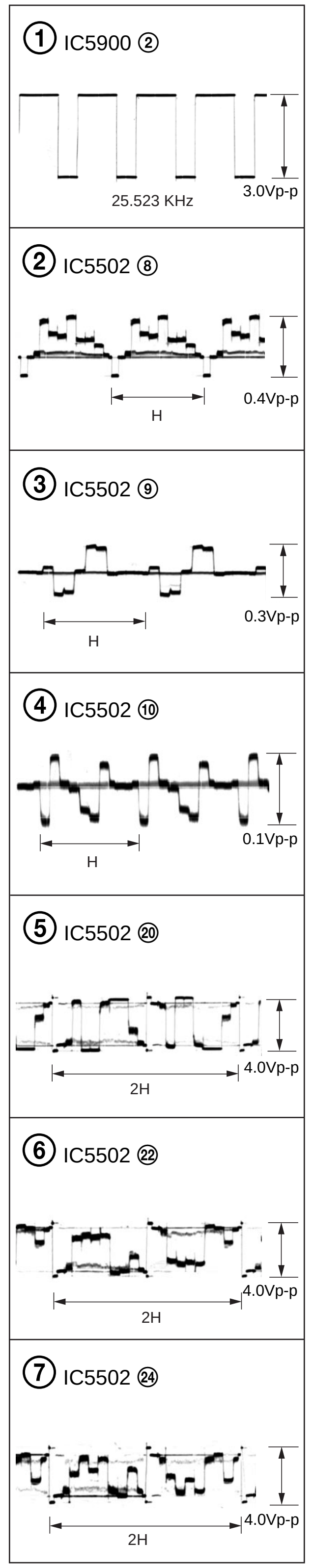
Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

• FP-93, 94, 642 FLEXIBLES are replaced as a block
So that these PRINTED WIRING BOARDS are omitted.

•SIGNAL PATH

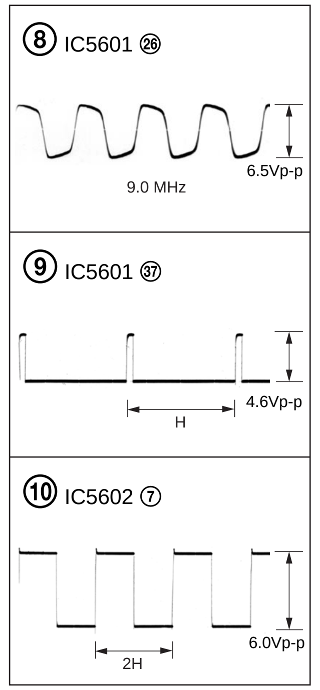
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB	⇨	⇨	

PD-106 BOARD (1/2)
CAMERA REC/PB



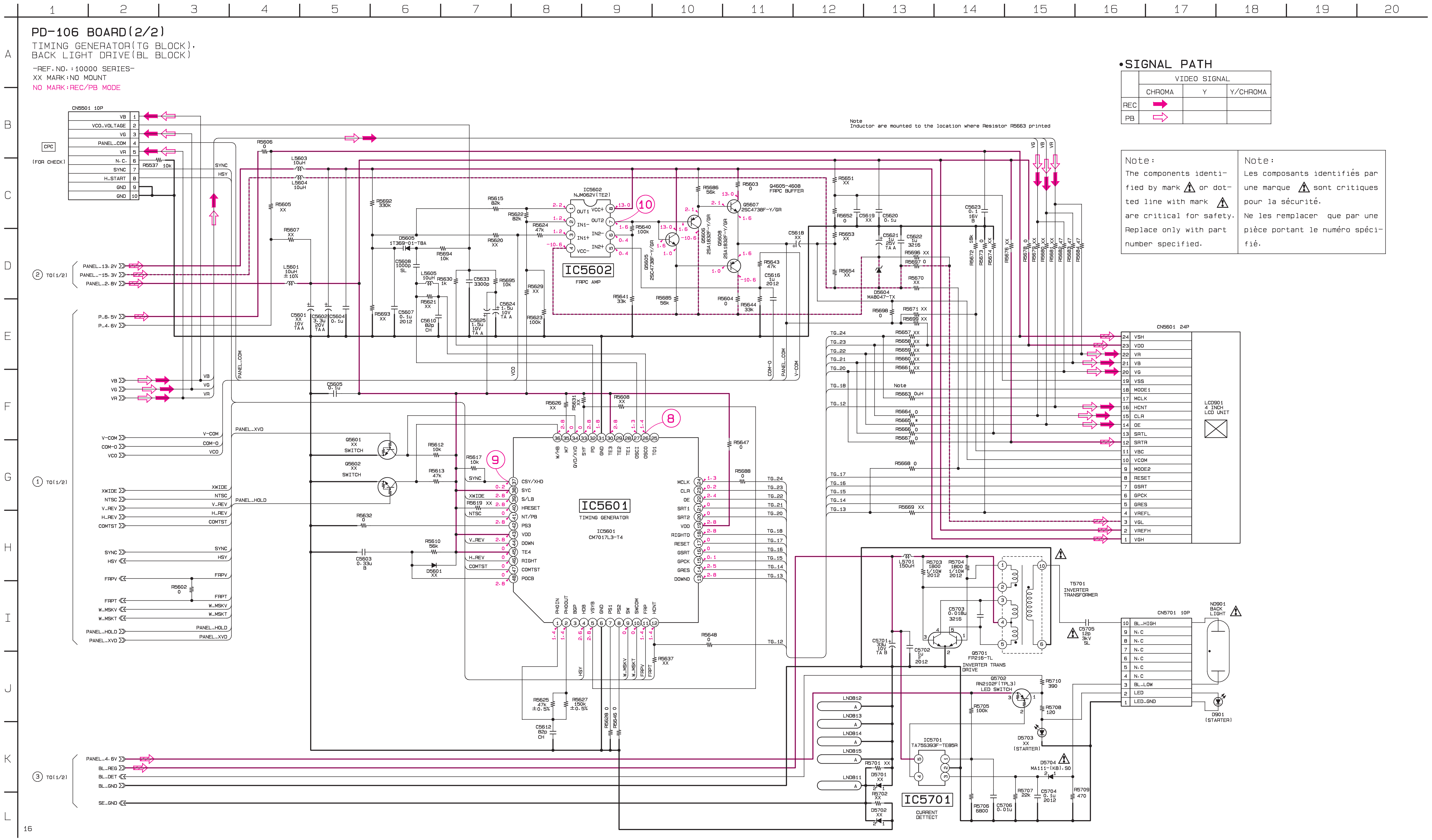
PD-106 BOARD (2/2)

CAMERA REC/PB



For schematic diagram

- Refer to page 4-100 for printed wiring board.

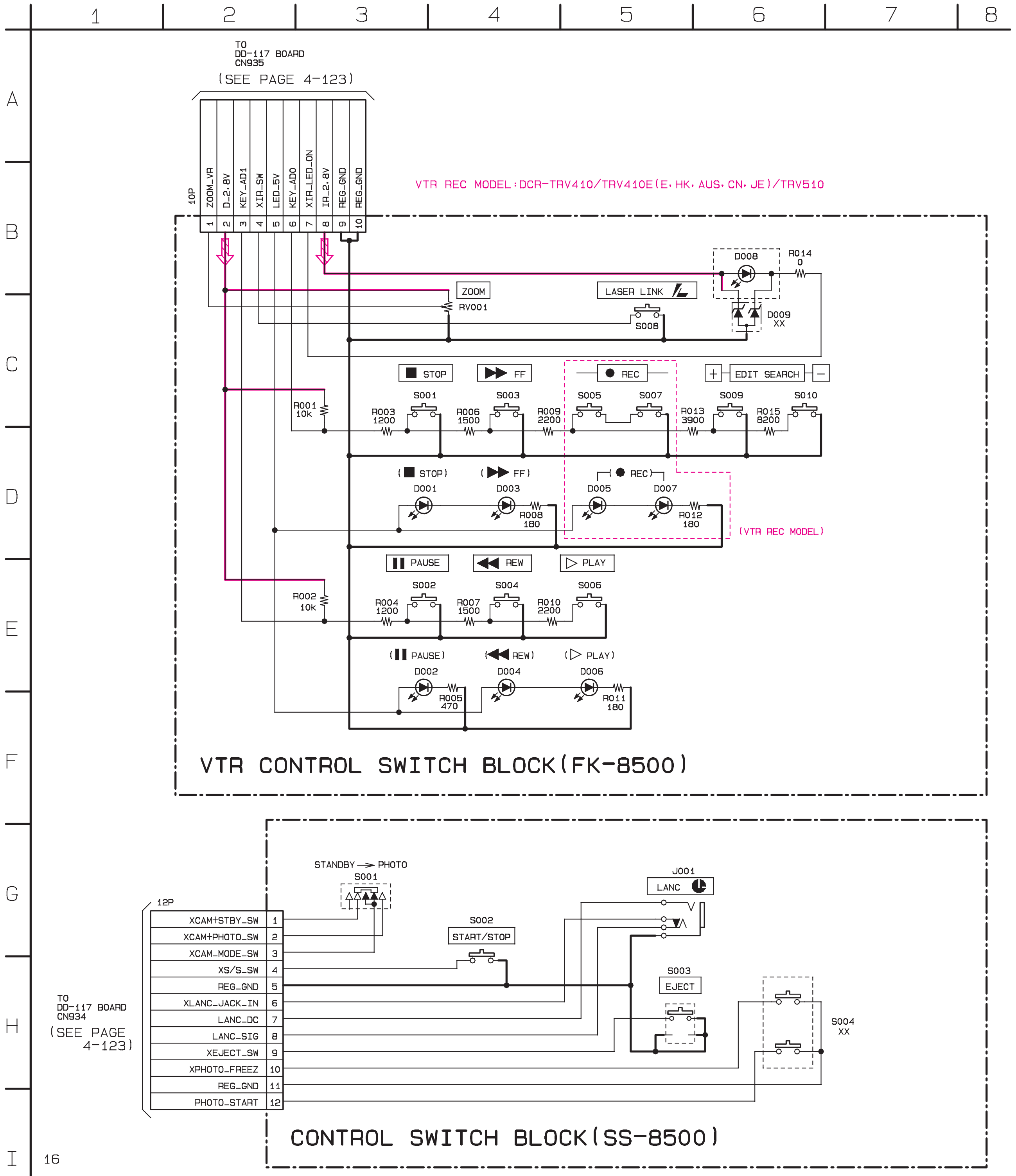


PD-106 BOARD(2/2)
TIMING GENERATOR(TG BLOCK),
BACK LIGHT DRIVE(BL BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
CN5501 10P
CPC
(FOR CHECK)
IC5602
NJM062V(TE2)
IC5602
FRPC AMP
Q4605-4608
FRPC BUFFER
IC5601
TIMING GENERATOR
IC5601
CM7017L3-T4
CN5601 24P
LCD901
4 INCH
LCD UNIT
T5701
INVERTER
TRANSFORMER
Q5701
FP216-TL
INVERTER TRANS
DRIVE
Q5702
RN2102F(TPL3)
LED SWITCH
IC5701
TA75S393F-TE85R
IC5701
CURRENT
DETECT
CN5701 10P
ND901
BACK
LIGHT
D901
(STARTER)
Note
Inductor are mounted to the location where Resistor R5663 printed
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
① TO(1/2)
② TO(1/2)
③ TO(1/2)

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

TIMING GEN., BACK LIGHT DRIVE
PD-106, FP-642, FP-94


1 2 3 4 5 6 7 8
A B C D E F G H I
TO DD-117 BOARD CN935 (SEE PAGE 4-123)
10P
1 ZOOM_VR
2 D_2.8V
3 KEY_AD1
4 XIR_SW
5 LED_5V
6 KEY_AD0
7 XIR_LED_ON
8 IR_2.8V
9 REG_GND
10 REG_GND
VTR REC MODEL:DCR-TRV410/TRV410E(E,HK,AUS,CN,JE)/TRV510
ZOOM
RV001
LASER LINK
S008
D008
R014 0
D009 XX
STOP
FF
REC
EDIT SEARCH
S001
S003
S005
S007
S009
S010
R001 10k
R003 1200
R006 1500
R009 2200
R013 3900
R015 8200
(STOP)
(FF)
(REC)
D001
D003
D005
D007
R008 180
R012 180
(VTR REC MODEL)
PAUSE
REW
PLAY
S002
S004
S006
R002 10k
R004 1200
R007 1500
R010 2200
(PAUSE)
(REW)
(PLAY)
D002
D004
D006
R005 470
R011 180
VTR CONTROL SWITCH BLOCK(FK-8500)
STANDBY → PHOTO
S001
J001
LANC
12P
1 XCAM+STBY_SW
2 XCAM+PHOTO_SW
3 XCAM_MODE_SW
4 XS/S_SW
5 REG_GND
6 XLANC_JACK_IN
7 LANC_DC
8 LANC_SIG
9 XEJECT_SW
10 XPHOTO_FREEZ
11 REG_GND
12 PHOTO_START
S002
START/STOP
S003
EJECT
S004 XX
TO DD-117 BOARD CN934 (SEE PAGE 4-123)
CONTROL SWITCH BLOCK(SS-8500)
16

• CONTROL SWITCH BLOCK(FK-8500, SS-8500) are replaced as a block, so that this PRINTED WIRING BOARD is omitted.

VF-126 (COLOR EVF) PRINTED WIRING BOARD

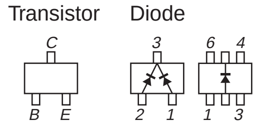
— Ref. No. VF-126 Board; 10,000 Series —

VF-126 BOARD

C4501	A-7	D4601	D-8	R4524	B-8
C4502	A-2	D4602	D-1	R4525	B-8
C4503	A-8	D4801	E-4	R4526	B-8
C4504	A-8	D4802	F-6	R4528	A-7
C4505	A-8			R4602	D-8
C4506	A-8	IC4501	A-8	R4604	D-8
C4507	A-8	IC4502	A-1	R4605	D-8
C4508	B-8	IC4601	D-1	R4606	D-1
C4509	B-7	IC4602	D-7	R4607	D-8
C4510	B-8	IC4603	D-8	R4608	D-2
C4511	B-8			R4609	D-8
C4512	B-1	L4501	A-2	R4610	D-8
C4513	B-2	L4502	B-7	R4611	D-1
C4514	B-7	L4601	C-7	R4612	D-1
C4515	A-7	L4602	C-1	R4613	D-8
C4516	B-8	L4603	D-8	R4614	D-8
C4517	B-8	L4801	E-6	R4615	D-8
C4601	D-8	L4802	E-5	R4616	D-1
C4602	C-2			R4617	D-2
C4603	D-8	ND4801	E-4	R4618	D-2
C4604	D-8			R4619	D-7
C4605	D-2	Q4501	A-1	R4620	E-1
C4606	D-1	Q4601	C-2	R4621	D-2
C4607	D-1	Q4602	C-1	R4622	D-2
C4608	D-8	Q4603	C-2	R4623	D-2
C4609	D-8	Q4604	C-1	R4624	D-2
C4610	C-7	Q4605	D-1	R4625	D-2
C4611	D-8	Q4801	F-6	R4626	D-2
C4612	D-2			R4627	D-2
C4613	D-1	R4501	A-1	R4629	D-2
C4614	D-1	R4502	A-1	R4630	D-1
C4615	D-1	R4503	A-8	R4631	D-1
C4616	D-1	R4504	A-7	R4632	D-1
C4617	D-2	R4505	A-7	R4634	D-1
C4618	D-1	R4506	A-7	R4635	D-8
C4619	D-2	R4507	A-7	R4636	D-8
C4620	D-2	R4508	A-7	R4637	D-8
C4621	D-7	R4509	A-9	R4638	D-1
C4622	D-2	R4510	A-7	R4638	D-8
C4623	D-2	R4511	A-7	R4639	D-8
C4624	D-7	R4512	A-8	R4801	E-6
C4625	D-7	R4513	A-7	R4802	E-6
C4626	C-7	R4514	A-7		
C4801	E-6	R4515	A-7	T4801	F-5
C4802	E-5	R4516	A-7		
C4803	E-5	R4517	A-7		
C4804	E-6	R4518	B-7		
		R4519	B-7		
CN4501	A-1	R4520	A-7		
CN4602	D-2	R4521	B-7		
		R4522	A-7		

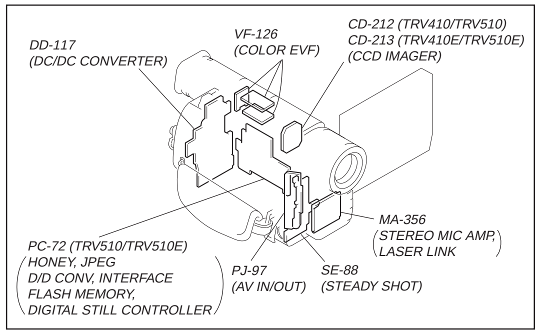
For printed wiring boards

- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

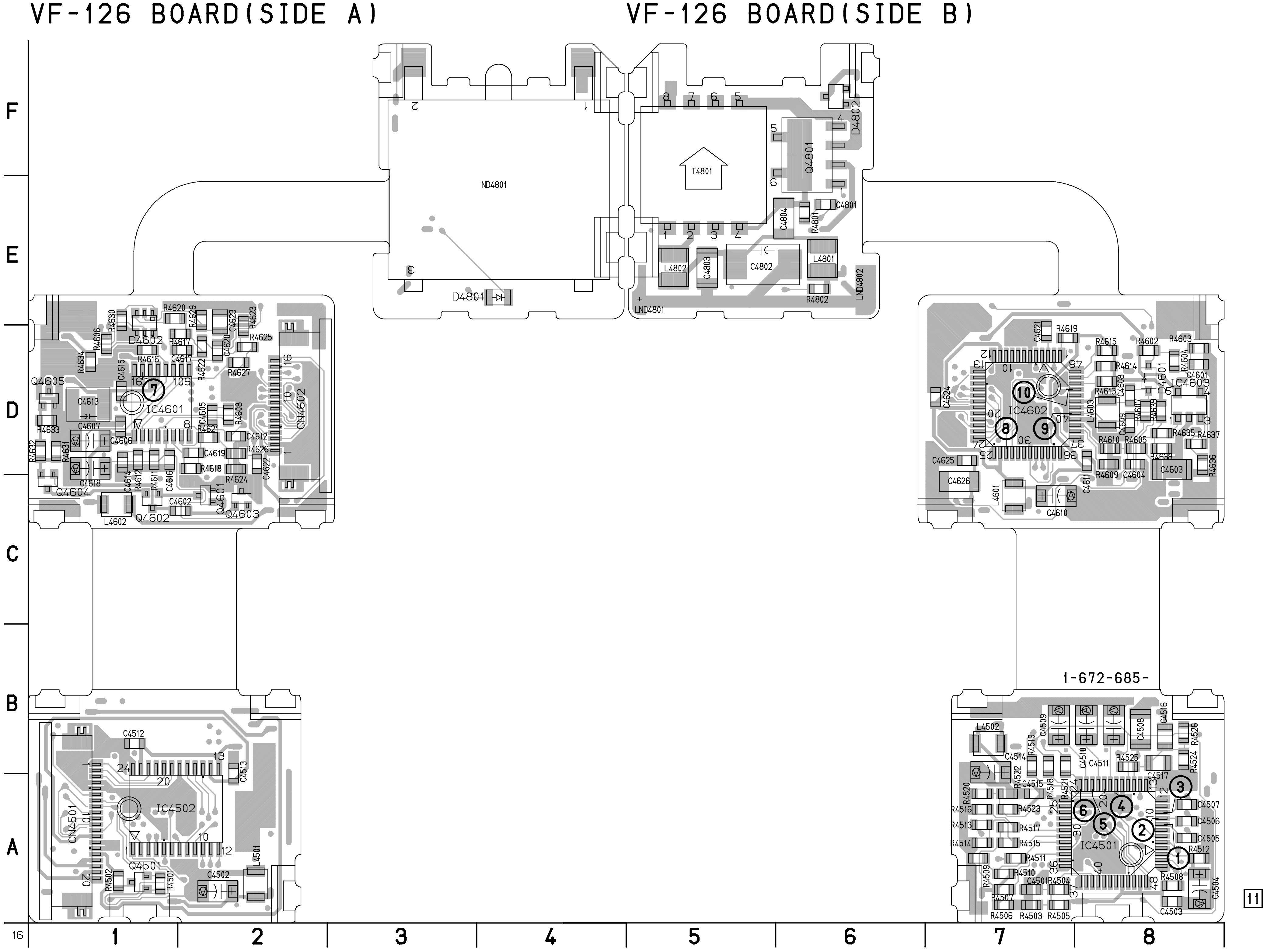


Transistor
Diode
C
B E
3
2 1
6 4
1 3

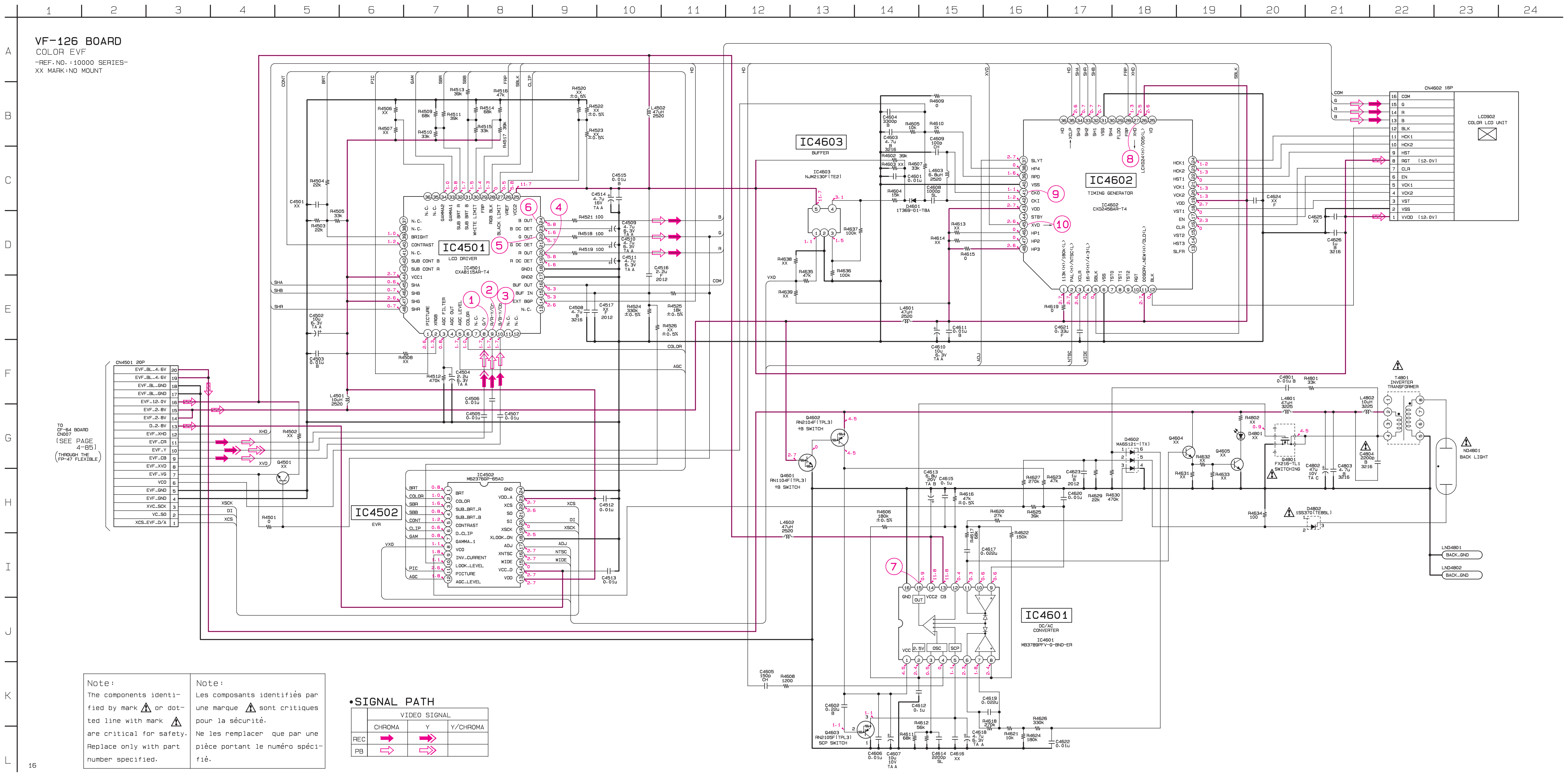
There are few cases that the part printed on this diagram isn't mounted in this model.



DD-117 (DC/DC CONVERTER)
VF-126 (COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
PC-72 (TRV510/TRV510E)
HONEY, JPEG
D/D CONV, INTERFACE
FLASH MEMORY,
DIGITAL STILL CONTROLLER
PJ-97 (AV IN/OUT)
SE-88 (STEADY SHOT)
MA-356 (STEREO MIC AMP, LASER LINK)



VF-126 BOARD(SIDE A)
VF-126 BOARD(SIDE B)
F
E
D
C
B
A
16
1
2
3
4
5
6
7
8
ND4801
T4801
Q4801
D4802
D4801
L4801
L4802
C4801
C4802
C4803
C4804
R4801
R4802
LND4801
LND4802
IC4601
IC4602
IC4603
IC4501
IC4502
CN4501
CN4602
Q4501
Q4601
Q4602
Q4603
Q4604
Q4605
D4601
D4602
L4501
L4502
L4601
L4602
1-672-685-
11


VF-126 BOARD
COLOR EVF
-REF. NO.:10000 SERIES-
XX MARK:NO MOUNT
IC4501
LCD DRIVER
CXA8115AR-T4
IC4502
EVR
M62376GP-65AD
IC4603
BUFFER
NJM2130F(TE2)
IC4602
TIMING GENERATOR
CXD3245BAR-T4
IC4601
DC/DC CONVERTER
MB3788PFV-G-BND-ER
CN4501 20P
TO CF-64 BOARD CN007 (SEE PAGE 4-85) (THROUGH THE FP-47 FLEXIBLE)
CN4502 15P
LCD902 COLOR LCD UNIT
T4801 INVERTER TRANSFORMER
ND4801 BACK LIGHT
Q4501 RN1104F(TPL3) +B SWITCH
Q4502 RN2104F(TPL3) +B SWITCH
Q4503 RN2105F(TPL3) SCP SWITCH
LND4801 BACK_GND
LND4802 BACK_GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
A B C D E F G H I J K L

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

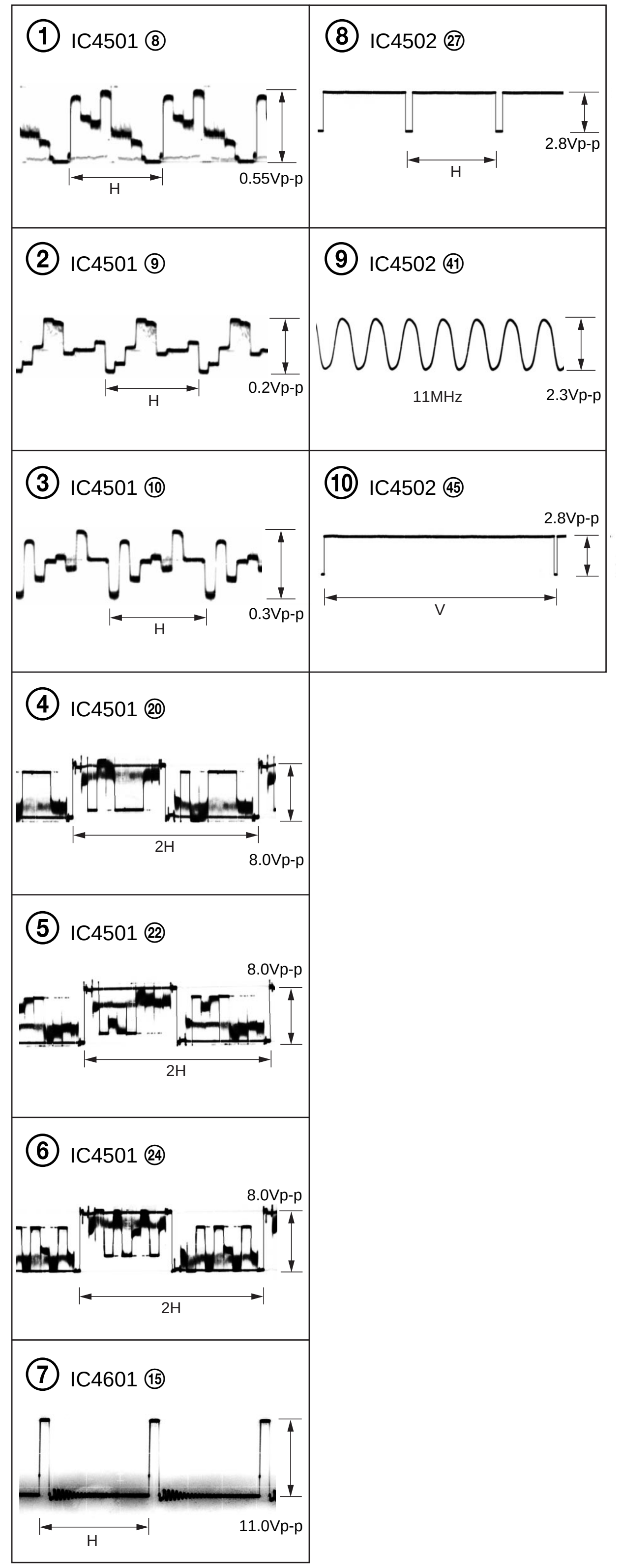
Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB	⇨	⇨	

16

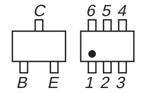
VF-126 BOARD
CAMERA REC/PB



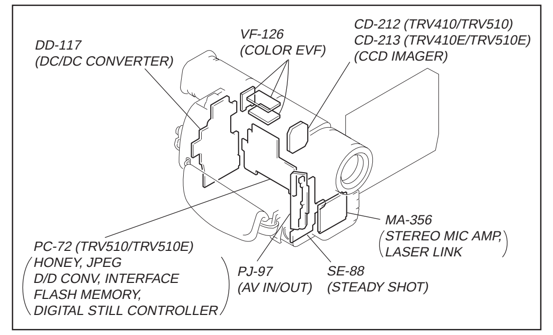
For printed wiring boards

- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

Transistor



There are few cases that the part printed on this diagram isn't mounted in this model.

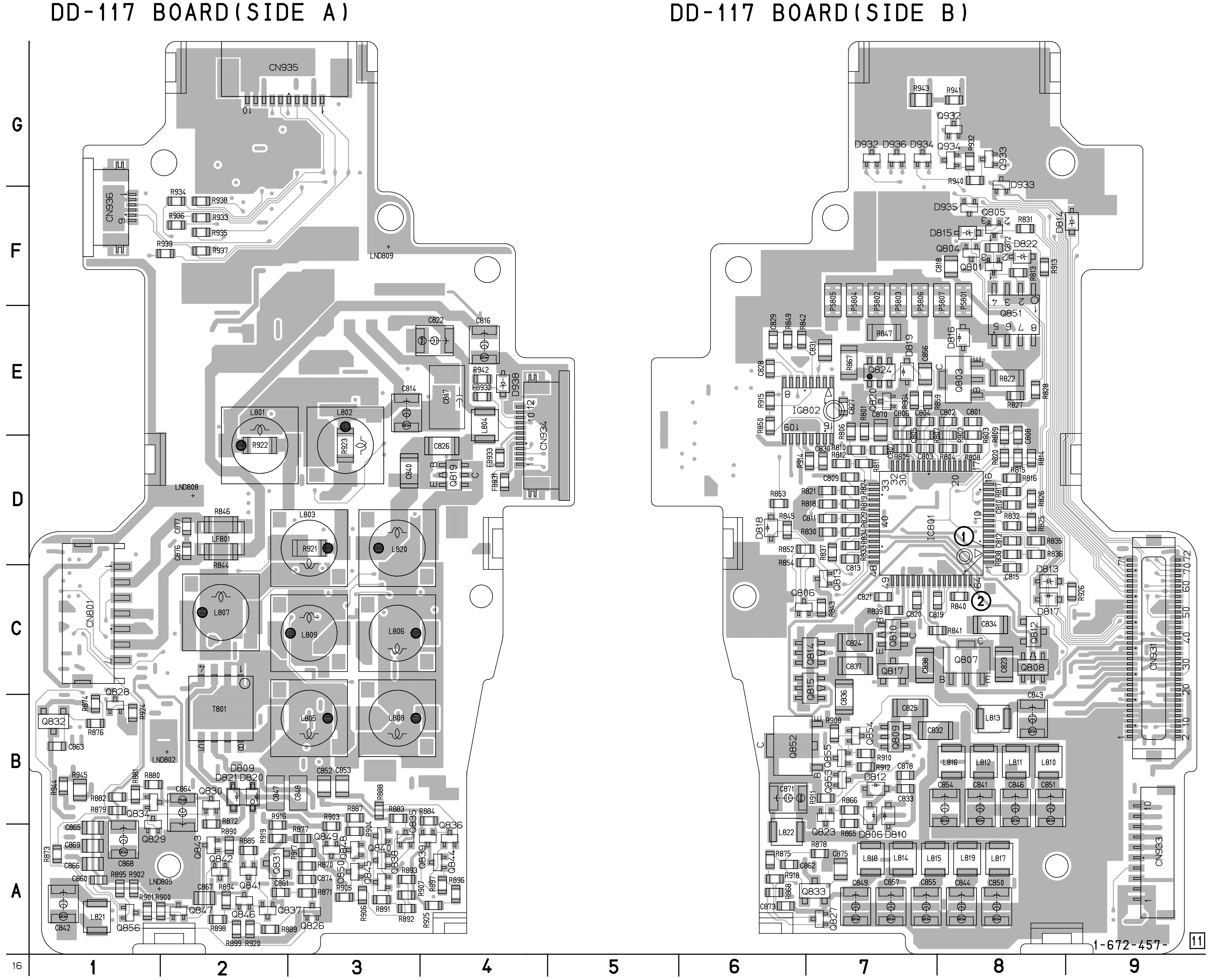

DD-117
(DC/DC CONVERTER)
VF-126
(COLOR EVF)
CD-212 (TRV410/TRV510)
CD-213 (TRV410E/TRV510E)
(CCD IMAGER)
MA-356
(STEREO MIC AMP, LASER LINK)
PC-72 (TRV510/TRV510E)
(HONEY, JPEG
D/D CONV, INTERFACE
FLASH MEMORY,
DIGITAL STILL CONTROLLER)
PJ-97
(AV IN/OUT)
SE-88
(STEADY SHOT)

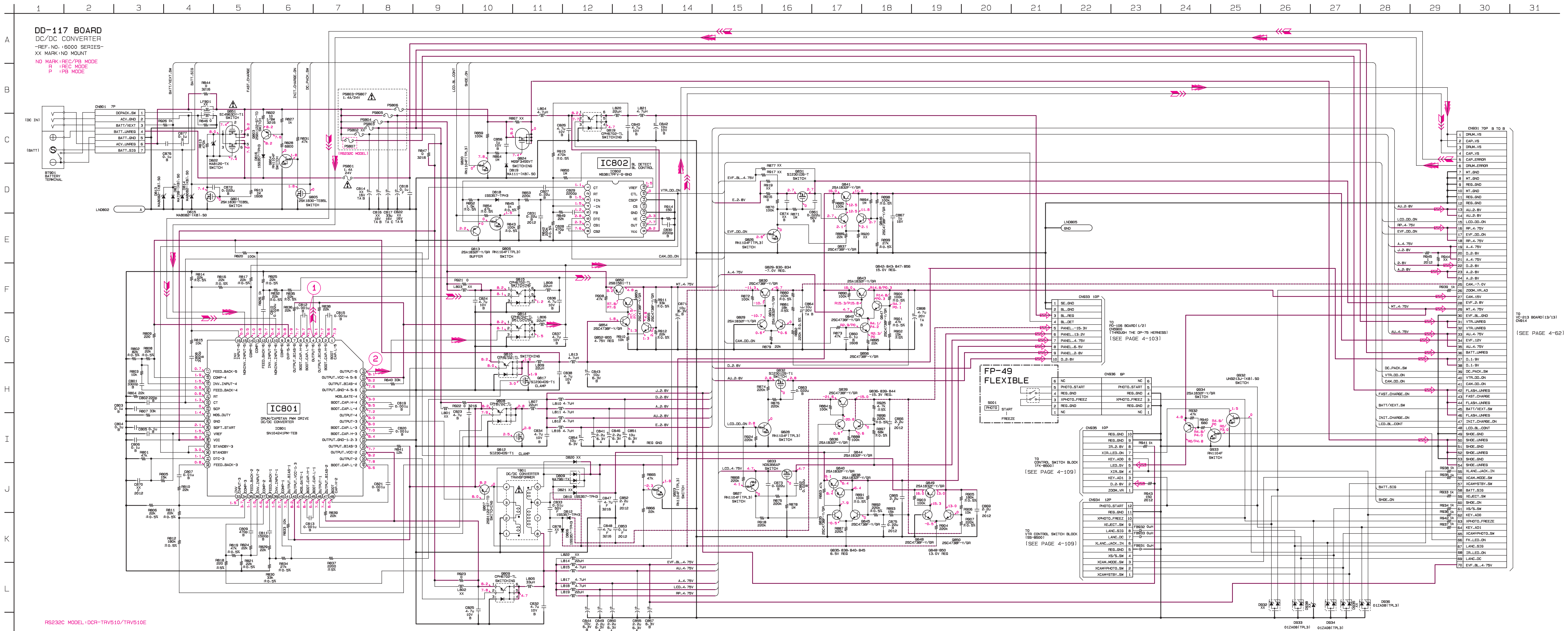
DD-117 BOARD

C801	E-8
C802	E-8
C803	D-7
C804	E-7
C805	D-7
C806	E-7
C807	D-7
C808	D-8
C809	D-7
C810	D-8
C811	D-7
C812	D-8
C813	D-7
C814	E-3
C815	C-8
C816	E-4
C817	E-4
C818	F-8
C819	C-7
C820	C-7
C821	C-7
C822	E-4
C823	C-8
C824	C-7
C825	B-7
C826	D-4
C827	E-7
C828	E-6
C829	E-6
C830	D-7
C831	E-7
C832	B-7
C833	B-7
C834	C-8
C836	B-7
C837	C-7
C838	C-7
C840	D-3
C841	B-8
C842	A-1
C843	B-8
C844	A-8
C846	B-8
C847	B-2
C848	B-3
C849	A-7
C850	A-8
C851	B-8
C852	B-3
C853	B-3
C854	B-8
C855	A-7
C856	E-7
C857	A-7
C860	A-1
C861	A-2
C862	A-6
C863	B-1
C864	B-2
C865	A-1
C866	A-1
C867	A-2
C868	A-1
C869	A-1
C870	E-7
C871	B-6
C872	F-8
C873	A-6
C874	A-3
C875	A-7
C876	D-2
C877	D-2
C878	B-7
CN801	C-1
CN931	C-9
CN933	A-9
CN934	D-4
CN935	G-3
CN936	F-1
D806	B-7
D809	B-2
D810	B-7
D812	B-7
D813	C-8
D814	F-9
D815	F-8
D816	E-8
D817	C-8
D818	D-6
D819	E-7
D820	B-2
D821	B-2
D822	F-8
D932	G-7
D933	F-8
D934	G-7
D935	F-8
D936	G-7
D938	E-4
FB931	D-4
FB932	E-4
FB933	D-4
IC801	D-7
IC802	E-7
L801	D-2
L802	D-3
L803	D-3
L804	E-4
L805	B-3
L806	C-3
L807	C-2
L808	B-3
L809	C-3
L810	B-8
L811	B-8
L812	B-8
L813	B-8
L814	A-7
L815	A-7
L816	B-8
L817	A-8
L818	A-7
L819	A-8
L820	D-3
L821	A-1
L822	A-6
LF801	D-2
PS801	F-8
PS802	F-7
PS803	F-7
PS804	F-7
PS805	F-7
PS806	F-7
PS807	F-8
Q801	F-8
Q803	E-8
Q804	F-8
Q805	F-8
Q806	C-6
Q807	C-8
Q808	C-8
Q809	B-7
Q810	C-7
Q812	C-8
Q813	C-7
Q814	C-7
Q815	C-7
Q817	C-7
Q819	D-4
Q820	E-7
Q823	B-7
Q824	E-7
Q826	A-3
Q827	A-7
Q828	B-1
Q829	A-1
Q830	B-2
Q831	A-2
Q832	B-1
Q833	A-7
Q834	B-1
Q835	A-3
Q836	A-4
Q837	A-2
Q838	A-3
Q839	A-4
Q840	A-3
Q841	A-2
Q842	A-2
Q843	A-2
Q844	A-4
Q845	A-3
Q846	A-2
Q847	A-2
Q848	A-3
Q849	A-3
Q850	A-3
Q851	E-8
Q852	B-6
Q853	B-7
Q854	B-7
Q855	B-7
Q856	A-1
Q932	G-8
Q933	G-8
Q934	G-8
R801	E-7
R802	D-8
R803	D-8
R804	D-8
R805	D-7
R806	E-7
R807	D-7
R808	D-8
R809	D-8
R810	D-7
R811	D-7
R812	D-7
R813	F-8
R814	D-8
R815	D-8
R816	D-8
R817	D-8
R818	D-7
R819	D-7
R820	D-8
R821	D-7
R822	E-8
R824	D-7
R825	D-8
R826	D-8
R827	E-8
R828	E-8
R829	D-7
R830	D-7
R831	F-8
R832	D-8
R833	D-7
R834	D-7
R835	D-8
R836	D-8
R837	D-7
R838	D-8
R839	C-7
R840	C-8
R841	C-8
R842	E-6
R843	C-7
R844	D-2
R845	D-6
R846	D-2
R847	E-7
R849	E-6
R850	E-6
R852	D-6
R853	D-6
R854	D-6
R859	E-7
R864	E-7
R865	B-7
R866	B-7
R867	E-7
R868	A-6
R870	A-3
R871	A-3
R872	B-2
R873	A-1
R874	B-1
R875	A-6
R876	B-1
R877	A-3
R878	A-7
R879	B-1
R880	B-1
R881	B-1
R882	B-1
R883	B-3
R884	B-4
R885	A-2
R887	B-3
R888	B-3
R889	A-2
R890	A-2
R891	A-3
R892	A-3
R893	A-3
R894	A-2
R895	A-1
R896	A-4
R897	A-4
R898	A-2
R899	A-2
R900	A-2
R901	A-1
R902	A-1
R903	A-3
R904	A-3
R905	A-3
R906	A-3
R907	A-3
R908	B-7
R910	B-7
R911	B-7
R912	B-7
R913	F-8
R914	D-7
R915	E-6
R916	A-2
R917	A-3
R918	A-6
R919	A-2
R920	A-2
R921	D-3
R922	D-2
R923	D-3
R924	B-1
R925	A-4
R926	C-9
R932	G-8
R933	F-2
R934	F-2
R935	F-2
R936	F-2
R937	F-2
R938	F-2
R939	F-2
R940	G-8
R941	G-8
R942	E-4
R943	G-7
R944	B-1
R945	B-1
T801	B-2

DD-117 (DC/DC CONVERTER) PRINTED WIRING BOARD

— Ref. No. DD-117 Board; 6,000 Series —


DD-117 BOARD(SIDE A)
DD-117 BOARD(SIDE B)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
CN935
CN936
CN801
CN931
CN933
CN934
L801
L802
L803
L805
L806
L807
L808
L809
T801
IC801
IC802
1-672-457-
11


DD-117 BOARD
DC/DC CONVERTER
-REF.NO.:6000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC801
DRUM/CAPSTAN PWM DRIVE
DC/DC CONVERTER
IC802
DETECT CONTROL
CN801 7P
CN831 70P
FP-49 FLEXIBLE
TO VC-213 BOARD(13/13) CN914 (SEE PAGE 4-62)
TO PD-105 BOARD(1/2) CN5601 (THROUGH THE DP-75 HARNESS) (SEE PAGE 4-103)
TO CONTROL SWITCH BLOCK (FK-8500) (SEE PAGE 4-109)
TO VTR CONTROL SWITCH BLOCK (SS-8500) (SEE PAGE 4-109)
T801 DC/DC CONVERTER TRANSFORMER

RS232C MODEL:DCR-TRV510/TRV510E

16

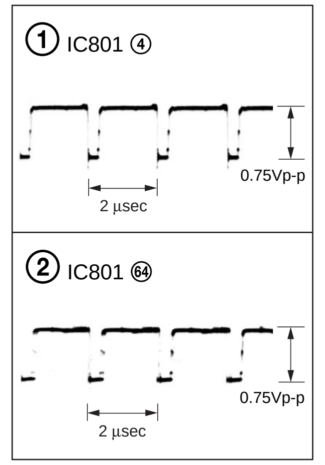
•SIGNAL PATH

	REC	REC/PB	PB
Drum servo (speed and phase)		⇛	
Capstan servo (speed and phase)		≫	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

DD-117 BOARD
CAMERA REC/PB



SECTION 5
ADJUSTMENTS

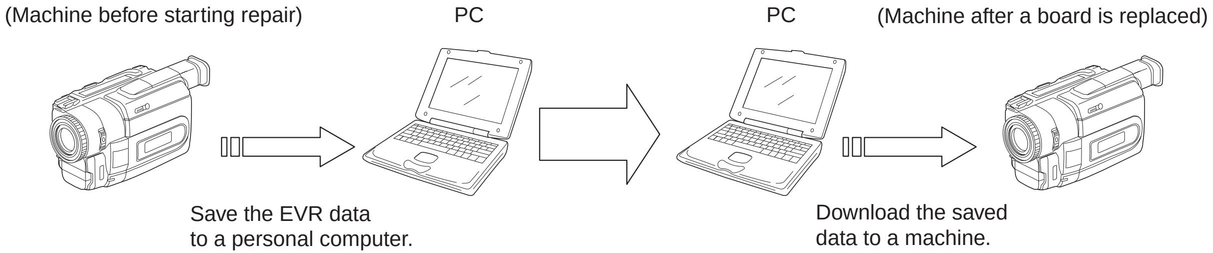
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

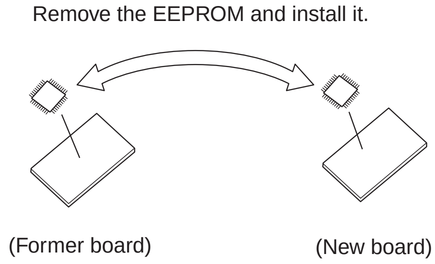
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.


(Machine before starting repair)
PC
PC
(Machine after a board is replaced)
Save the EVR data
to a personal computer.
Download the saved
data to a machine.

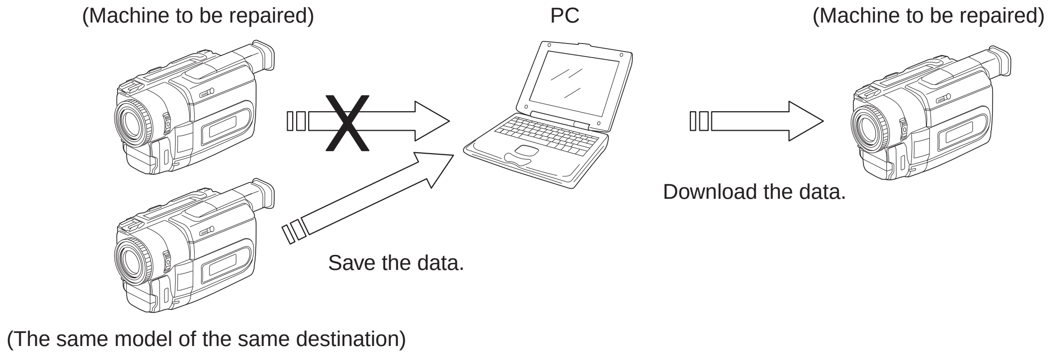
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.


Remove the EEPROM and install it.
(Former board)
(New board)

Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.


(Machine to be repaired)
PC
(Machine to be repaired)
X
Download the data.
Save the data.
(The same model of the same destination)

After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 5-3 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards.

• Adjusting items when replacing main parts

When replacing main parts, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts																									
		Block replacement							Mounted parts replacement																		
		Lens device	Mechanism deck	Color EVF block LCD902 (LCD panel)	LCD block ND901 (Fluorescent tube)	LCD block LCD901 (LCD panel)	Mechanism deck M901 (Drum assembly)	Mechanism deck M902 (Capstan motor)	CD-212/213 board IC1401/2401 (CCD imager)	PD-106 board IC5502 (RGB decoder)	PD-106 board IC5601 (Timing generator)	VF-126 board IC4501 (RGB decoder)	VF-126 board IC4602 (Timing generator)	VF-126 board IC4601 (Backlight driver)	VF-126 board ND4801 (Fluorescent tube)	VC-213 board IC502 (S/H, AGC)	VC-213 board IC102 (REC/PB AMP)	VC-213 board IC103 (EQ, A/D CONV., PLL)	VC-213 board IC501, X501 (Timing generator)	VC-213 board IC643 (LINE OUT AMP)	VC-213 board IC351 (Video interface)	VC-213 board IC254, X251 (X’tal OSC.)	VC-213 board IC601 (Base band input)	VC-213 board IC251 (8mm Y/C process)	VC-213 board IC201 (8mm PB RF AMP)	VC-213 board IC644 (IR transmitter)	VC-213 board IC760 (8mm AFM process)
Initialization of B, C, D, E, F page data	Initialization of B page data (*1)																										
	Initialization of C page data																										
	Initialization of D page data																										
	Initialization of E, F page data																										
Camera	HALL adj.	●																									
	Flange back adj.	●							●																		
	AGC gain calibration adj.								●							●											
	Color reproduction adj.								●							●											
	IRIS IN/OUT adj.	●							●							●											
	Auto white balance standard data input								●							●											
	Auto white balance adj.								●							●											
Color EVF	Color EVF initial data input																										
	VCO adj.												●														
	Bright adj.											●									●						
	Contrast adj.											●									●						
	Backlight consumption current adj.													●	●												
	White balance adj.			●								●		●	●												
LCD	LCD initial data input																										
	VCO adj.										●																
	D range adj.									●											●						
	Bright adj.									●											●						
	Contrast adj.									●											●						
	V-COM level adj.									●																	
	Color adj.									●																	
	V-COM adj.					●				●																	
	White balance adj.				●	●				●																	
System control	Battery end adj.																										
Servo & RF	Switching position adj.		●				●																				
	AGC center level adj.																●	●									
	APC & AEQ adj.																●	●									
	PLL f_0 & LPF f_0 final adj.																●	●									
	Hi8/standard8 switching position adj.		●				●																				
	CAP FG offset adj.		●					●																			
Video	27MHz/36MHz origin oscillation adj.																		●								
	Chroma BPF f_0 adj.																			●							
	S VIDEO OUT Y level adj.																			●	●						
	S VIDEO OUT chroma level adj.																			●	●						
	Hi8/standard8 14MHz origin oscillation adj.																					●					
	BBI PLL adj.																						●				
	Hi8/standard8 Y level adj.																							●			
	Hi8/standard8 C level adj.																							●			
	Hi8/standard8 AFC f_0 adj.																							●			
	Hi8/standard8 RP filter f_0 adj.																								●		
IR	IR video carrier frequency adj.																									●	
	IR video deviation adj.																									●	
	IR audio deviation adj.																									●	
Audio	Hi8/standard8 AFM BPF f_0 adj.																										●
	Hi8/standard8 AFM 1.5MHz deviation adj.																										●
	Hi8/standard8 AFM 1.7MHz deviation adj.																										●
Mechanism	Tape path adj.		●				●	●																			

Table. 5-1-1(1).

• Adjusting items when replacing a board or EEPROM

When replacing a board or EEPROM, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts						
		Board replacement						
		SE-88 board (COMPLETE)	VC-213 board (COMPLETE)	PD-106 board (COMPLETE)	VF-126 board (COMPLETE)	VC-213 board IC402 (EEPROM)	VC-213 board IC901 (EEPROM)	PC-72 board IC607 (EEPROM)(*1)
Initialization of B, C, D, E, F page data	Initialization of B page data (*1)							●
	Initialization of C page data					●		
	Initialization of D page data					●		
	Initialization of E, F page data						●	
Camera	HALL adj.		●				●	
	Flange back adj.		●				●	
	AGC gain calibration adj.		●				●	
	Color reproduction adj.		●				●	
	IRIS IN/OUT adj.		●				●	
	Auto white balance standard data input		●				●	
	Auto white balance adj.		●				●	
Color EVF	Color EVF initial data input		●			●		
	VCO adj.		●		●	●		
	Bright adj.		●		●	●		
	Contrast adj.		●		●	●		
	Backlight consumption current adj.		●		●	●		
	White balance adj.		●		●	●		
LCD	LCD initial data input		●			●	●*2	
	VCO adj.		●	●		●		
	D range adj.		●	●		●		
	Bright adj.		●	●		●		
	Contrast adj.		●	●		●		
	V-COM level adj.		●	●		●		
	Color adj.		●	●		●		
	V-COM adj.		●	●		●		
	White balance adj.		●	●		●		
System control	Battery end adj.					●		
Servo & RF	Switching position adj.		●			●		
	AGC center level adj.					●		
	APC & AEQ adj.					●		
	PLL f_0 & LPF f_0 final adj.					●		
	Hi8/standard8 switching position adj.		●				●	
	CAP FG offset adj.		●				●	
Video	27MHz/36MHz origin oscillation adj.						●	
	Chroma BPF f_0 adj.					●		
	S VIDEO OUT Y level adj.					●		
	S VIDEO OUT chroma level adj.					●		
	Hi8/standard8 14MHz origin oscillation adj.						●	
	BBI PLL adj.						●	
	Hi8/standard8 Y level adj.						●	
	Hi8/standard8 C level adj.						●	
	Hi8/standard8 AFC f_0 adj.						●	
	Hi8/standard8 RP filter f_0 adj.						●	
IR	IR video carrier frequency adj.						●	
	IR video deviation adj.						●	
	IR audio deviation adj.						●	
Audio	Hi8/standard8 AFM BPF f_0 adj.						●	
	Hi8/standard8 AFM 1.5MHz deviation adj.						●	
	Hi8/standard8 AFM 1.7MHz deviation adj.						●	
Mechanism	Tape path adj.		●					

Table. 5-1-1(2).

Note 1: *1 : DCR-TRV510/TRV510E only
*2 : Page: E, address: C3 and C4 only.

Note 2: 720H model: DCR-TRV410/TRV510
960H model:DCR-TRV410E/TRV510E

	CD board
720H model	CD-212
960H model	CD-213

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Regulated power supply
- Color monitor
- Digital voltmeter
- Vectorscope

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.3	J-6080-818-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded). (Note 1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	Multi CPC jig	J-6082-311-A	For adjusting the LCD block
J-9	CPC-13 jig	J-6082-443-A	For adjusting the video section For adjusting the color viewfinder
J-10	Power cord (Note 2)	J-6082-223-A	For connecting the battery terminal and DC power supply
J-11	Extension cable (16P, 0.5mm)	J-6082-357-A	For extension between the CD-212 board (CN1401) and the VC-213 board (CN501)(720H model) For extension between the CD-213 board (CN2401) and the VC-213 board (CN501)(960H model)
J-12	Extension cable (70P, 0.5mm)	J-6082-439-A	For extension between the DD-117 board (CN931) and the VC-213 board (CN914)
J-13	IR receiver jig	J-6082-383-A	For adjusting the IR transmitter
J-14	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-15	Camera table	J-6082-384-A	For adjusting the flange back

Note 1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note 2: Connect the adjustment remote commander to the LANC jack, and set to HOLD switch to the "ADJ" side.

Note 3: 720H model:DCR-TRV410/TRV510
960H model:DCR-TRV410E/TRV510E

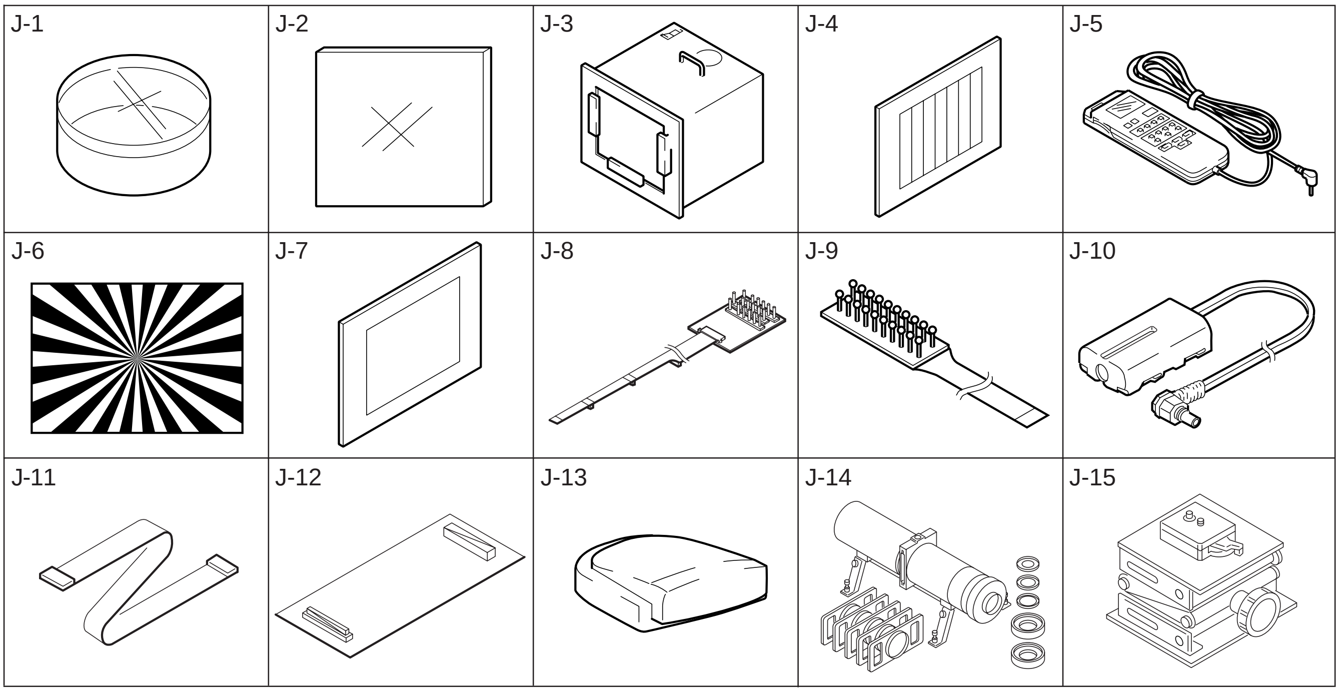


Fig. 5-1-1.

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note 2: When performing only the adjustments, the lens block and boards need not be disassembled.

1) Connect the equipment for adjustments according to Fig. 5-1-3.
2) The front panel block (MA-356 board, focus ring, microphone unit) must be assembled because the focus ring is used for adjustments.

Note 3: As removing the cabinet (R) (removing the VC-213 board CN911) means removing the lithium 3V power supply (CF-64 board BH001), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) has been removed, the self-diagnosis data, data on history of use (total drum rotation time, etc.) will be lost. Before removing, note down the self-diagnosis data and data on history use (data of page: 2, address: A2 to AA). (Refer to "SELF-DIAGNOSIS FUNCTION" for the self-diagnosis data, and to "5-4. Service Mode" for the data on the history use.)

Note 4: Setting the "Forced Camera Power ON" Mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
   The above procedure will enable the camera power to be turned on with the front panel block removed. After completing adjustments, be sure to exit the "Forced Camera Power ON Mode".

Note 5: Exiting the "Forced Camera Power ON" Mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

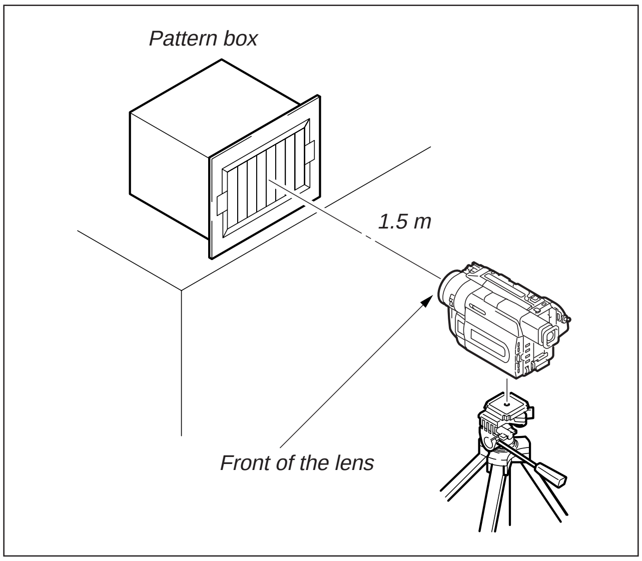
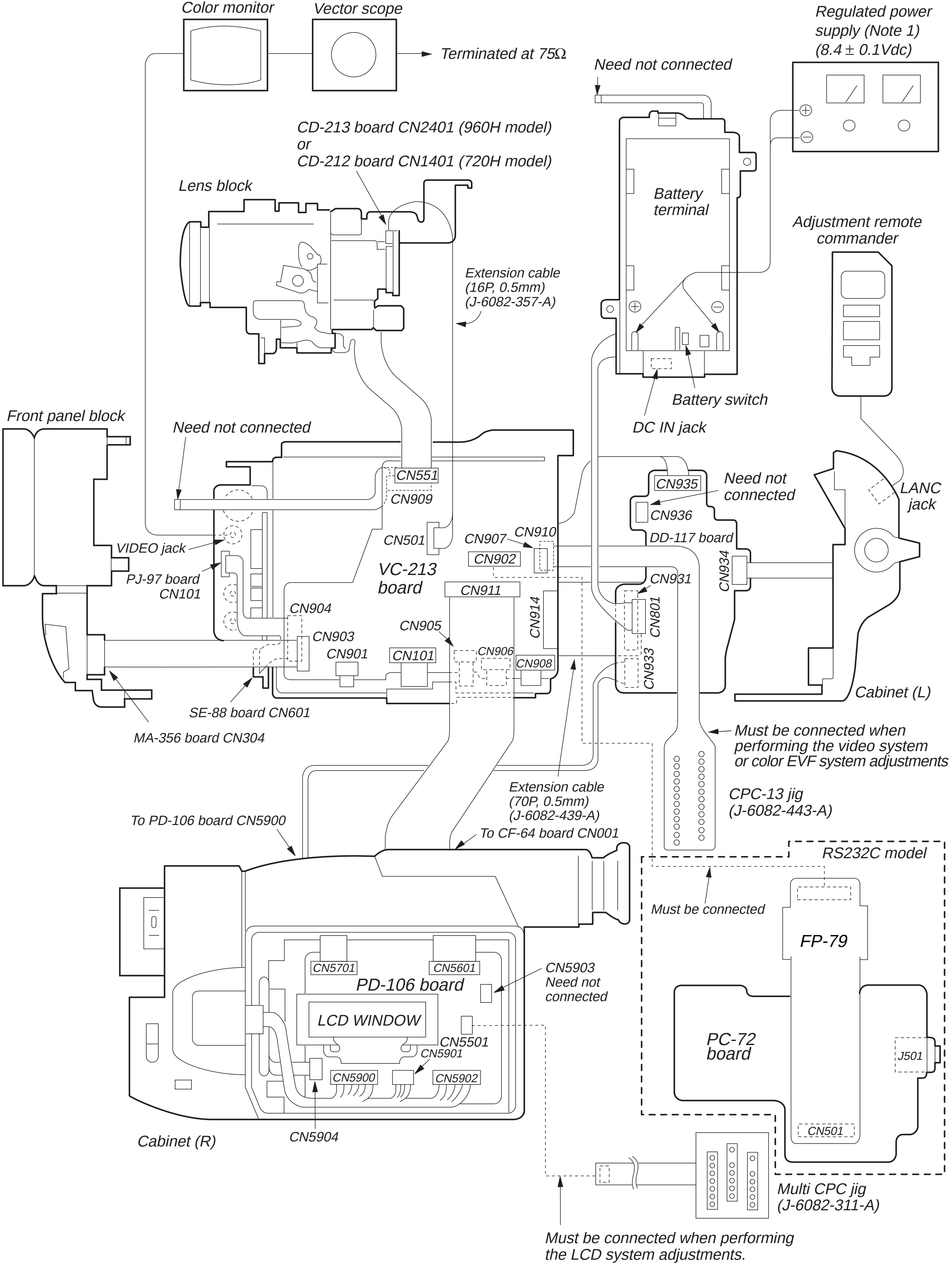


Fig. 5-1-2.

Note 1 : Press the battery switch of the battery terminal using adhesive tape, etc.
Note 2 : 720H model : DCR-TRV410/TRV510
960H model : DCR-TRV410E/TRV510E
RS232C model : DCR-TRV510/TRV510E



Color monitor
Vector scope
Terminated at 75Ω
Need not connected
Regulated power supply (Note 1) (8.4 ± 0.1Vdc)
CD-213 board CN2401 (960H model) or CD-212 board CN1401 (720H model)
Lens block
Battery terminal
Adjustment remote commander
Extension cable (16P, 0.5mm) (J-6082-357-A)
Battery switch
DC IN jack
Front panel block
Need not connected
CN551
CN909
CN935
Need not connected
CN936
LANC jack
CN501
CN907
CN910
DD-117 board
VIDEO jack
CN902
CN934
PJ-97 board CN101
VC-213 board
CN931
CN911
CN914
CN801
CN904
CN903
CN905
CN906
CN901
CN101
CN908
CN933
Cabinet (L)
SE-88 board CN601
MA-356 board CN304
Must be connected when performing the video system or color EVF system adjustments
Extension cable (70P, 0.5mm) (J-6082-439-A)
CPC-13 jig (J-6082-443-A)
To PD-106 board CN5900
To CF-64 board CN001
RS232C model
Must be connected
FP-79
CN5701
CN5601
CN5903 Need not connected
PD-106 board
LCD WINDOW
PC-72 board
J501
CN5501
CN5901
CN5900
CN5902
CN501
Cabinet (R)
CN5904
Multi CPC jig (J-6082-311-A)
Must be connected when performing the LCD system adjustments.

Fig. 5-1-3.

1-1-3. Precaution

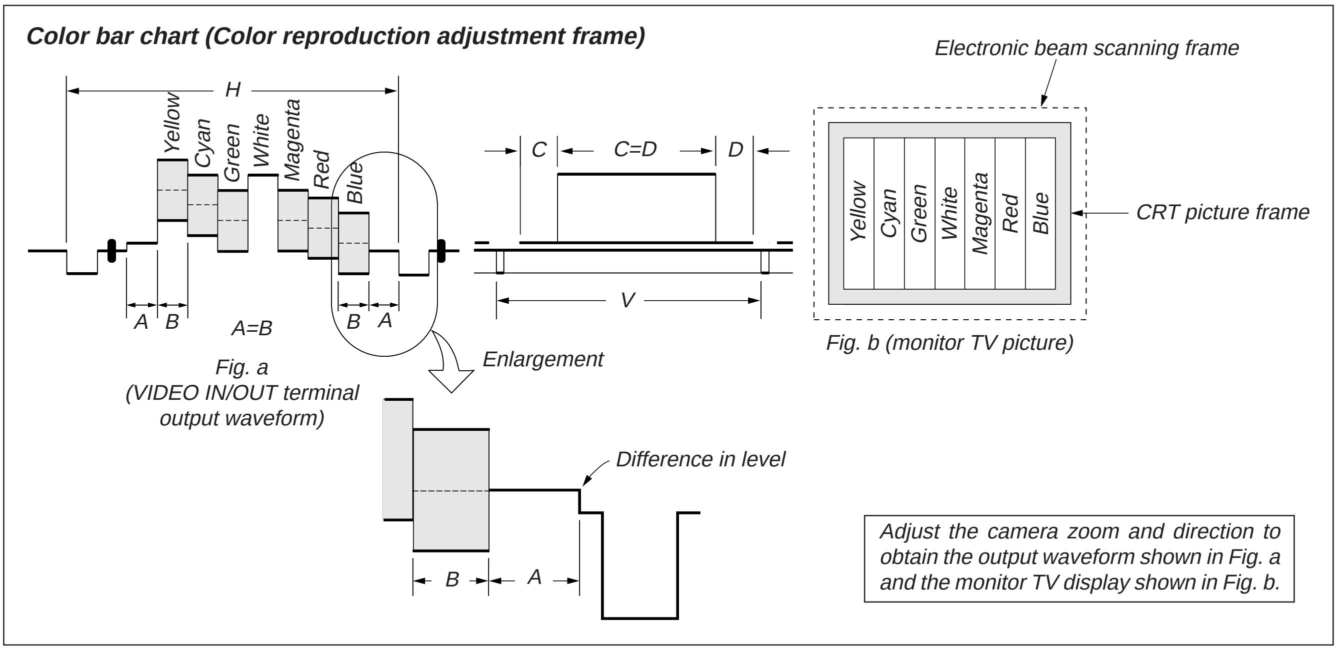
1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1.	POWER switch (MA-356 board)	CAMERA
2.	NIGHT SHOT switch (Lens block)	OFF
3.	DEMO MODE (Menu display)	OFF
4.	DIGITAL ZOOM (Menu display)	OFF
5.	STEADY SHOT (Menu display)	OFF
6.	DISPLAY (Menu display)	V-OUT/LCD
7.	DISPLAY (CF-64 board)	ON
8.	FOCUS switch (MR-8500 block)	MANUAL
9.	PROGRAM AE (CF-64 board)	Auto
10.	BACK LIGHT (CF-64 board)	OFF
11.	PICTURE EFFECT (CF-64 board)	OFF
12.	DIGITAL EFFECT (CF-64 board)	OFF
13.	16 : 9 WIDE (MENU display)	OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.


Color bar chart (Color reproduction adjustment frame)

H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
A=B
B
A
C
C=D
D
V
Electronic beam scanning frame
Yellow
Cyan
Green
White
Magenta
Red
Blue
CRT picture frame
Enlargement
Difference in level
B
A

Fig. a
(VIDEO IN/OUT terminal
output waveform)

Fig. b (monitor TV picture)

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the monitor TV display shown in Fig. b.

Fig.5-1-4.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4. (Color reproduction adjustment frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-5 using A0 size (1189mm × 841mm) black and white vellum paper.

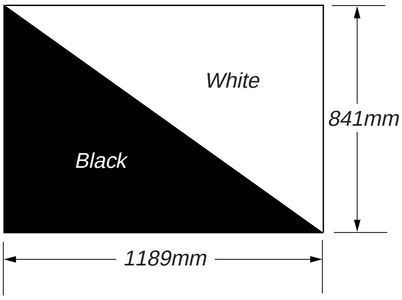

White
Black
841mm
1189mm

Fig. 5-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF C, D, E, F PAGE DATA

1-2-1. INITIALIZATION OF C PAGE DATA

1. Initializing the C Page Data

Note: If the C page data has been initialized, "Modification of C Page Data" and following adjustments need to be performed again.

1) Servo and RF system adjustment
2) "Chroma BPF f_0 adjustment", "S VIDEO OUT Y level adjustment" and "S VIDEO OUT chroma level adjustment" of the video system adjustments.

Adjusting Page	C
Adjusting Address	10 to DF

Initializing Method:

1) Select page: 0, address: 01, and set data: 80.
2) Select page: 3, address: 80, set data: 0C, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 80, and check that the data changes to "1C".
4) Select page: 0, address: 01, and set data: 00.
5) Perform "Modification of C Page Data".

2. Modification of C Page Data

If the C page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note : If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of C Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. C Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the C Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of C Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	EE	EE	Switching position adj.
11	00	00	
12	00	00	
13	00	00	
14			Fixed data-1
15			(Initialized data)
16			
17			
18	25	25	AEQ adj.
19	25	25	
1A			Fixed data-1
1B	25	25	AEQ adj.
1C	25	25	
1D			Fixed data-1
1E	25	25	AGC center level adj.
1F	3E	3E	PLL f_0 adj.
20	3E	3E	
21	CA	CA	APC adj.
22	99	99	LPF f_0 adj.
23			Fixed data-1
24			(Initialized data)
25	88	88	S VIDEO OUT Y Level Adj.
26	E3	E3	S VIDEO OUT chroma level adj.
27	A1	A1	S VIDEO OUT chroma level adj.
28			Fixed data-1
29			(Initialized data)
2A			
2B	04	04	Chroma BPF f_0 adj.
2C			Fixed data-1
2D			(Initialized data)
2E			
2F			
30			
31			Fixed data-2
32			Fixed data-1
33			(Initialized data)
34			Fixed data-2
35			Fixed data-1
36			(Initialized data)
37			
38	00	00	Emergency memory address
39	00	00	
3A	00	00	
3B	00	00	
3C	00	00	
3D	00	00	
3E	00	00	
3F	00	00	
40	00	00	

Address	Initial value		Remark
	NTSC	PAL	
41	00	00	Emergency memory address
42	00	00	
43	00	00	
44			Fixed data-1
45			(Initialized data)
46			
47	20	20	PLL f_0 fine adj.
48			Fixed data-1
49			(Initialized data)
4A			
4B			
4C			
4D			
4E			
4F			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F			
60			Fixed data-2
61			Fixed data-1
62			(Initialized data)
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			
70			
71			
72			
73	03	03	APC adj.
74			Fixed data-1
75			(Initialized data)
76			

Address	Initial value		Remark
	NTSC	PAL	
77			Fixed data-1
78			(Initialized data)
79			
7A			
7B			
7C			
7D			
7E			
7F			
80			
81			
82			
83			
84			
85			
86			
87			Fixed data-2
88			(Modified data, copy the data built in
89			the same model.)
8A			
8B			Fixed data-1
8C			(Initialized data)
8D			
8E			
8F			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			Fixed data-2
A4			Fixed data-1
A5			(Initialized data)
A6			
A7			
A8			
A9			
AA			
AB			
AC			

Address	Initial value		Remark
	NTSC	PAL	
AD			Fixed data-2
AE			Fixed data-1
AF			(Initialized data)
B0			
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			

Table. 5-1-2.

1-2-2. INITIALIZATION OF D PAGE DATA

1. Initializing the D Page Data

Note: If the D Page data has been initialized, "Modification of D Page Data" and following adjustments need to be performed again.

1) Color viewfinder system adjustments
2) LCD system adjustments
3) Battery end adjustments

Adjusting page	D
Adjusting Address	10 to 8F

Initializing Method:

1) Select page: 0, address: 01, and set data: 80.
2) Select page: 3, address: 80, set data: 0D, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 80, and check that the data changes to "1D".
4) Select page: 0, address: 01, and set data: 00.
5) Perform "Modification of D Page Data".

2. Modification of D Page Data

If the D Page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note : If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of D Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

Note: If the following symptoms occur after completing of the "Modification of D page data" check that the data of the "Fixed data-2" addresses are same as those of the same model of the same destination.
1) The battery end mark on the LCD or viewfinder screen is flashing.
2) The power is shut off so that unit cannot operate.

3. D Page Table

Note 1: Fixed data-1 : Initialized data. (Refer to "1. Initializing the D Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of D Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Test mode
11			Fixed data-1
12			(Initialized data)
13			Fixed data-2
14			(Modified data, copy the data built in the same model.)
15			Fixed data-1
16			(Initialized data)
17			

Address	Initial value		Remark
	NTSC	PAL	
18			Fixed data-2
19			Fixed data-1
1A			Fixed data-2
1B			Fixed data-1 (Initialized data)
1C			
1D			
1E			
1F			
20			Fixed data-2
21			
22			Fixed data-1 (Initialized data)
23			
24			
25			Fixed data-2
26			Fixed data-1
27			Fixed data-2 (Modified data, copy the data built in the same model.)
28			
29			Fixed data-1
2A			Fixed data-2
2B			
2C			Fixed data-1
2D			Fixed data-2 (Modified data, copy the data built in the same model.)
2E			
2F			
30	90	90	Battery end adj.
31	98	98	
32	AC	AC	
33	B2	B2	
34	BA	BA	
35			Fixed data-1
36			Fixed data-2
37			Fixed data-1 (Initialized data)
38			
39			
3A			
3B			
3C			
3D			
3E			
3F			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
4A			
4B			
4C			

Address	Initial value		Remark
	NTSC	PAL	
4D			Fixed data-1 (Initialized data)
4E			
4F			Fixed data-2
50			Fixed data-1 (Initialized data)
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F			
60			
61			
62			
63			
64			
65			Fixed data-2
66			Fixed data-1
67			Fixed data-2
68			Fixed data-1 (Initialized data)
69			
6A			
6B			
6C			
6D			
6E			Fixed data-2 (Modified data, copy the data built in the same model.)
6F			
70			
71	90	90	White balance adj. (EVF)
72	60	60	
73			Fixed data-1 (Initialized data)
74			
75	70	70	VCO adj. (EVF)
76	B0	B0	Backlight consumption current adj. (EVF)
77			Fixed data-1
78			Fixed data-2
79			Fixed data-1
7A	60	60	Bright adj. (EVF)
7B	70	70	Contrast adj. (EVF)
7C	90	90	Backlight consumption current adj. (EVF)
7D			Fixed data-1 (Initialized data)
7E			
7F			
80	98	98	White balance adj. (LCD)

Address	Initial value		Remark
	NTSC	PAL	
81	7B	7B	White balance adj. (LCD)
82	80	80	D range adj. (LCD)
83	89	89	V-COM level adj. (LCD)
84	80	80	VCO adj. (LCD)
85	80	80	V-COM adj. (LCD)
86			Fixed data-1
87			
88			
89			
8A	84	84	Bright adj. (LCD)
8B	78	78	Color adj. (LCD)
8C	8D	8D	Contrast adj. (LCD)
8D			Fixed data-1 (Initialized data)
8E			
8F			

Table. 5-1-3.

1-2-3. INITIALIZATION OF B PAGE DATA (DCR-TRV510/TRV510E)

1. Initializing the B Page Data

Note: If the B page data has been initialized, “Modification of B Page Data” need to be performed again.

Adjusting page	B
Adjusting Address	00 to 7F

Switch setting:

1) POWER .... CAMERA
2) LOCK/STANDBY/MEMORY .... MEMORY

Initializing Method:

1) Select page: 0, address: 01, and set data: 80.
2) Select page: 5, address: 02, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 5, address: 01, set data: F3, and press the PAUSE button.
4) Select page: 5, address: 00, set data: 01, and press the PAUSE button.
5) Select page: 5, address: 01, and wait for several seconds.
6) Select page: 5, address: 00, and check that the data changes to “00”.
7) Select page: 5, address: 02, and check that the data changes to “00”.
8) Perform “Modification of B Page Data”.

2. Modification of B Page Data

If the B page data has been initialized, change the data of the “Fixed data-2” address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 80.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note : If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of B Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjusting remote commander.

3. B Page Table

Note: Fixed data-1 : Initialized data. (Refer to “1. Initializing the B Page Data”.)
Fixed data-2 : Modified data. (Refer to “2. Modification of B Page Data”.)

Address	Remark
00	Fixed data-1 (Initialized data)
01	
02	
03	
04	
05	

Address	Remark
06	Fixed data-1
07	(Initialized data)
08	
09	
0A	
0B	
0C	
0D	
0E	
0F	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
1A	
1B	
1C	
1D	
1E	
1F	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
2A	
2B	
2C	
2D	
2E	
2F	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
3A	
3B	
3C	

Address	Remark
3D	Fixed data-1
3E	(Initialized data)
3F	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
4A	
4B	
4C	
4D	
4E	
4F	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
5A	
5B	
5C	
5D	
5E	
5F	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
6A	
6B	
6C	
6D	
6E	
6F	
70	
71	
72	
73	

Address	Remark
74	Fixed data-1
75	(Initialized data)
76	
77	
78	
79	
7A	
7B	
7C	
7D	
7E	
7F to FF	

Table. 5-1-4.

1-2-4. INITIALIZATION OF E, F PAGE DATA

1. Initializing the E, F Page Data

Note: If the E, F page data has been initialized, “Modification of E, F Page Data” and following adjustments need to be performed again.

1) Camera system adjustments
2) “Hi8/standard 8 mm switching position adjustment” and “CAP FG offset adjustment” of the servo & RF system adjustments
3) Video system adjustments
4) IR transmitter adjustments
5) Audio system adjustments

Adjusting Page	F
Adjusting Address	00 to FF
Adjusting Page	E
Adjusting Address	00 to FF

Initializing Method:

1) Select page: 0, address: 01, and set data: 80.
2) Select page: 6, address: 00, and set data: 55 (NTSC) or data: 51 (PAL).
3) Select page: 6, address: 01, set data: 55 (NTSC) or data: 51 (PAL), and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 02, and check that the data is “01”.
5) Select page: 0, address: 01, and set data: 00.
6) Perform “Modification of E, F Page Data”.

2. Modification of E, F Page Data

If the E, F page data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note : If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of E, F Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. F Page table

Note: Fixed data-1 : Initialized data. (Refer to “1. Initializing the E, F Page Data”.)
Fixed data-2 : Modified data. (Refer to “2. Modification of E, F Page Data”.)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Emergency memory address
11	00	00	
12	00	00	
13	00	00	
14	00	00	
15	00	00	
16	00	00	
17	00	00	
18	00	00	
19	00	00	
1A	00	00	
1B	00	00	
1C			Fixed data-2
1D			Fixed data-1 (Initialized data)
1E			
1F			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E	43	43	AGC gain calibration adj.
2F	3F	3F	
30	AB	AB	
31	4B	4B	
32	2B	2B	AWB standard data input
33	00	00	
34	54	54	
35	00	00	
36			Fixed data-1 (Initialized data)
37			
38	1C	1C	Flange back adj.
39	03	03	
3A	25	25	
3B	24	24	
3C	11	11	
3D	05	05	
3E	0A	0A	Hi8/standard 8 mm switching position adj.
3F	00	00	
40	A0	A0	27MHz/36MHz origin oscillation adj.
41	80	80	Hi8/standard 8 mm 14MHz origin osc. adj.
42	80	80	BBI PLL adj.
43			Fixed data-1 (Initialized data)
44			
45			
46			
47	88	88	HALL adj.
48	6A	6A	
49			Fixed data-2
4A			Fixed data-1
4B			Fixed data-2
4C			Fixed data-1 (Initialized data)
4D			
4E	30	30	Color reproduction adj.
4F			Fixed data-1
50	37	37	Color reproduction adj.
51			Fixed data-1 (Initialized data)
52			
53			
54	94	94	Auto white balance adj.
55	62	62	
56	3C	3C	IRIS IN/OUT adj.
57	44	44	
58			Fixed data-1 (Initialized data)
59			
5A	2A	2A	Flange back adj.
5B	00	00	
5C	19	19	
5D	00	00	
5E	37	37	
5F	52	52	Angular velocity sensor sensitivity data check
60	52	52	
61	83	83	CAP FG offset adj.
62	7A	7A	Hi8/standard 8 mm AFM 1.5MHz deviation adj.
63	8D	8D	Hi8/standard 8 mm AFM 1.7MHz deviation adj.
64	7A	7A	Hi8/standard 8 mm AFM BPF f_0 adj.
65			Fixed data-1
66	41	41	IR video deviation adj.
67	33	33	IR audio deviation adj.
68	C7	C7	IR video carrier freq. adj.
69	6B	6B	Hi8/standard 8 mm Y level adj.
6A	40	40	Hi8/standard 8 mm AFC f_0 adj.
6B	9A	9A	Hi8/standard 8 mm chroma level adj.
6C			Fixed data-1 (Initialized data)
6D			
6E	60	60	Hi8/standard 8 mm RP Filter f_0 adj.
6F			Fixed data-1 (Initialized data)
70			
71			
72			
73			

Address	Initial value		Remark
	NTSC	PAL	
74			Fixed data-1 (Initialized data)
75			
76			
77			
78			
79			
7A			
7B			
7C			
7D			
7E			
7F			
80			
81			
82			
83			
84			
85			
86			Fixed data-2
87			Fixed data-1 (Initialized data)
88			
89			
8A			Fixed data-2 (Modified data, copy the data built in the same model.)
8B			
8C			
8D			Fixed data-1 (Initialized data)
8E			
8F			
90			
91			
92			
93			
94			Fixed data-2
95			Fixed data-1 (Initialized data)
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			

Address	Initial value		Remark
	NTSC	PAL	
AA			Fixed data-1 (Initialized data)
AB			
AC			
AD			
AE			
AF			
B0			
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			Fixed data-2
D3			Fixed data-1 (Initialized data)
D4			
D5			
D6			
D7			
D8			Fixed data-2 (Modified data, copy the data built in the same model.)
D9			
DA			
DB			Fixed data-1 (Initialized data)
DC			
DD			Fixed data-2
DE			Fixed data-1 (Initialized data)
DF			

Address	Initial value		Remark
	NTSC	PAL	
E0			Fixed data-1 (Initialized data)
E1			
E2			Fixed data-2
E3			Fixed data-1 (Initialized data)
E4			
E5			
E6			
E7			
E8			
E9			Fixed data-2
EA			Fixed data-1 (Initialized data)
EB			
EC			
ED			
EE			
EF			
F0			
F1			
F2			Fixed data-2
F3			Fixed data-1 (Initialized data)
F4			
F5			
F6			
F7			
F8	00	00	Flange back adj.
F9	00	00	
FA	00	00	
FB	FD	FD	Color reproduction adj.
FC	F3	F1	
FD			Fixed data-1 (Initialized data)
FE			
FF			

Table. 5-1-5.

4. E Page Table

Note: Fixed data-1 : Initialized data. (Refer to “1. Initializing the E, F Page Data”.)
Fixed data-2 : Modified data. (Refer to “2. Modification of E, F Page Data”.)

Address	Remark
00	Fixed data-1 (Initialized data)
01	
02	
03	
04	
05	
06	
07	
08	
09	
0A	
0B	
0C	
0D	
0E	
0F	
10	
11	Fixed data-2 (Modified data, copy the data built in the same model.)
12	
13	Fixed data-1 (Initialized data)
14	
15	Fixed data-2
16	Fixed data-1 (Initialized data)
17	
18	
19	
1A	
1B	
1C	
1D	
1E	
1F	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
2A	Fixed data-2
2B	Fixed data-1 (Initialized data)
2C	
2D	
2E	
2F	
30	
31	

Address	Remark
32	Fixed data-1 (Initialized data)
33	
34	
35	
36	
37	
38	
39	
3A	
3B	
3C	
3D	
3E	
3F	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
4A	
4B	
4C	
4D	
4E	Fixed data-2
4F	Fixed data-1 (Initialized data)
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
5A	
5B	
5C	
5D	
5E	
5F	
60	
61	
62	
63	
64	
65	
66	
67	
68	

Address	Remark
69	Fixed data-1 (Initialized data)
6A	
6B	
6C	
6D	
6E	
6F	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
7A	
7B	
7C	
7D	
7E	
7F	
80	
81	
82	
83	
84	
85	
86	
87	
88	Fixed data-2 (Modified data, copy the data built in the same model.)
89	
8A	
8B	Fixed data-1 (Initialized data)
8C	
8D	
8E	
8F	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
9A	
9B	
9C	
9D	
9E	
9F	

Address	Remark
A0	Fixed data-1 (Initialized data)
A1	
A2	
A3	
A4	
A5	
A6	
A7	
A8	
A9	
AA	
AB	
AC	
AD	
AE	
AF	
B0	
B1	
B2	
B3	
B4	
B5	
B6	
B7	
B8	
B9	
BA	
BB	
BC	
BD	
BE	
BF	
C0	
C1	
C2	
C3	Fixed data-2 (Modified data, copy the data built in the same model.)
C4	
C5	Fixed data-1 (Initialized data)
C6	
C7	
C8	
C9	
CA	
CB	
CC	
CD	
CE	
CF	
D0	
D1	
D2	
D3	
D4	
D5	
D6	Fixed data-1 (Initialized data)
D7	
D8	
D9	
DA	
DB	
DC	
DD	
DE	
DF	
E0	
E1	
E2	
E3	
E4	
E5	
E6	
E7	
E8	
E9	
EA	
EB	
EC	
ED	
EE	
EF	
F0	
F1	
F2	
F3	
F4	
F5	
F6	
F7	
F8	
F9	
FA	
FB	
FC	
FD	
FE	
FF	

Table. 5-1-6.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, Check that the specified values of “27/36MHz Origin Oscillation Adjustment”, “S VIDEO OUT Y level Adjustment” and “S VIDEO OUT C level Adjustment” of “VIDEO SYSTEM ADJUSTMENT” are satisfied.

1. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and offset.

Subject	Not required
Measurement Point	Display data of page 1
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	47, 48
Specified Value	88 to 8C during IRIS OPEN 15 to 19 during IRIS CLOSE

Note: Displayed data of page 1 of the adjustment remote commander.

1 : 00 : XX

Display data

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: 6D, and press the PAUSE button of the adjustment remote commander. (The HALL adjustment is performed and the adjustment data is stored in page: F, address: 47 and 48.)
3) Select page: 6, address: 02, and check that the data is “01”.
4) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

Checking method:

1) Select page: 0, address: 03, and set data: 03.
2) Select page: 6, address: 01, set data: 01, and press the PAUSE button.
3) Select page: 1, and check that the display data (Note) during IRIS OPEN satisfies the specified value.
4) Select page: 6, address: 01, set data: 03, and press the PAUSE button.
5) Select page: 1, and check that the display data during IRIS CLOSE satisfies the specified value.

Processing after Completing Adjustments

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 0, address: 03, and set data: 00.

2. Flange Back Adjustment (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Siemens star chart with ND filter for the minipattern box (Note 1)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	38 to 3D, 5A to 5E, F8 to FA

Note 1: Dark Siemens star chart.

Switch setting:

1) NIGHT SHOT .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Preparation for adjustment

The minipattern box is installed as shown in the following figure.

Note : The attachment lenses are not used.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

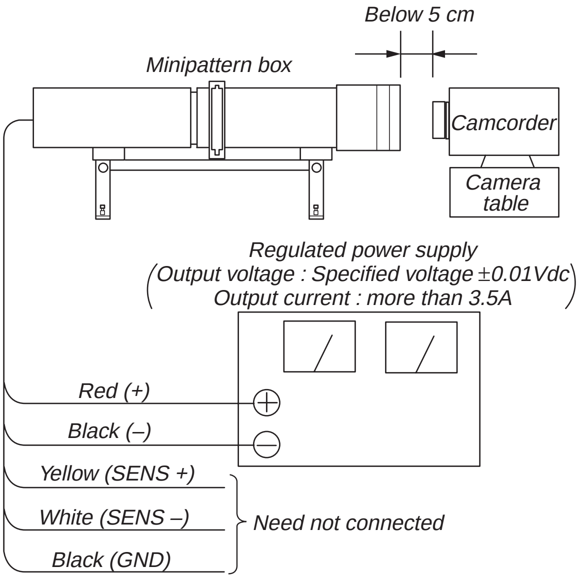


Fig. 5-1-6.

Adjusting method:

1) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 5 cm.
2) Make the height of the minipattern box and the camcorder equal.
3) Check that the output voltage of the regulated power supply is the specified voltage ± 0.01Vdc.
4) Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.
5) Select page: 0, address: 01, and set data: 01.
6) Check that the data of page: F, address:38 to 3D, 5A to 5E, F8 to FA is the initial value (See table below).

Address	Data	Address	Data
38	1C	5B	00
39	03	5C	19
3A	25	5D	00
3B	24	5E	37
3C	11	F8	00
3D	05	F9	00
5A	2A	FA	00

7) Select page: 6, address: 02, and check that the data is “00”.
8) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
9) Select page: 6, address: 01, set data: 27, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses:38 to 3D, 5A to 5E, F8 to FA.)
10) Select page: 6, address: 02, and check that the data is “01”.

Processing after Completing Adjustments

1) Select page: 0, address:01, and set data: 00.
2) Turn OFF the main power supply (8.4V).
3) Perform “Flange Back Check”.

3. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500 m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

3-1. Flange Back Adjustment(1)

Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 350 ± 50 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	38 to 3D, 5A to 5E, F8 to FA

Switch setting:

1) NIGHT SHOT ....OFF
2) DIGITAL ZOOM (Menu display) ....OFF
3) STEADY SHOT (Menu display) ....OFF

Adjusting method:

1) Check that at both the zoom lens TELE end and WIDE end, the center of the chart for the flange back adjustment and center of the exposure screen coincide.
2) Select page: 0, address: 01, and set data: 01.
3) Check that the data of page: F, address:38 to 3D, 5A to 5E, F8 to FA is the initial value (See table below).

Address	Data	Address	Data
38	1C	5B	00
39	03	5C	19
3A	25	5D	00
3B	24	5E	37
3C	11	F8	00
3D	05	F9	00
5A	2A	FA	00

4) Select page: 6, address: 02, and check that the data is "00".
5) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
6) Select page: 6, address: 01, set data: 15, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses:38 to 3D, 5A to 5E, F8 to FA.)
7) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments

1) Turn OFF the main power supply (8.4V).
2) Perform "Flange Back Adjustment (2)".

3-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	38 to 3D, 5A to 5E, F8 to FA

Switch setting:

1) NIGHT SHOT ....OFF
2) DIGITAL ZOOM (Menu display) ....OFF
3) STEADY SHOT (Menu display) ....OFF

Adjusting method:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 6, address: 02, and check that the data is "00".
4) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
5) Place a ND filter on the lens so that the optimum image is obtain.
6) Select page: 6, address: 01, set data: 29, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses:38 to 3D, 5A to 5E, F8 to FA.)
7) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments

1) Select page: 0, address: 01, and set data: 00.
2) Turn OFF the main power supply (8.4V).
3) Perform "Flange Back Check".

4. Flange Back Check

Subject	Siemens star (2.0 m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Switch setting:
1) NIGHT SHOT ....OFF
2) DIGITAL ZOOM (Menu display) ....OFF
3) STEADY SHOT (Menu display) ....OFF

Checking method:
1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3) Select page: 6, address: 40, and set data: 02.
4) Select page: 6, address: 41, and set data: 01.
5) Shoot the Siemens star with the zoom TELE end.
6) Turn on the auto focus.
7) Check that the lens is focused (Note).
8) Select page: 6, address: 21, and set data: 10.
9) Shoot the Siemens star with the zoom WIDE end.
10) Observe the TV monitor and check that the lens is focused.

Note: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.
1) Select page: 0, address: 03, and set data: 0F.
2) Page 1 shows the state of the focus.

1 : 00 : XX
- Odd: Focused
- Even: Unfocused

Processing after Completing Adjustments
1) Select page: 6, address: 21, and set data: 00.
2) Select page: 6, address: 40, and set data: 00.
3) Select page: 6, address: 41, and set data: 00.
4) Select page: 0, address: 03, and set data: 00.

5. Picture Frame Setting

Subject	Color bar chart (Color reproduction adjustment frame) (1.5m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Switch setting:
1) NIGHT SHOT ....OFF
2) DIGITAL ZOOM (Menu display) ....OFF
3) STEADY SHOT (Menu display) ....OFF

Setting method:
1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.

Check on the oscilloscope

1. Horizontal period

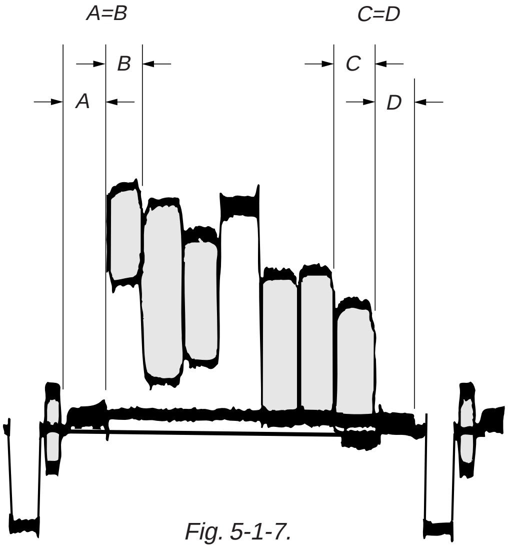


Fig. 5-1-7.

2. Vertical period

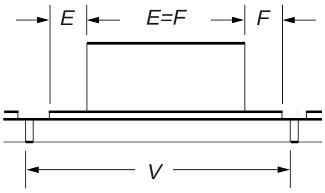


Fig. 5-1-8.

Check on the monitor TV (Underscanned mode)

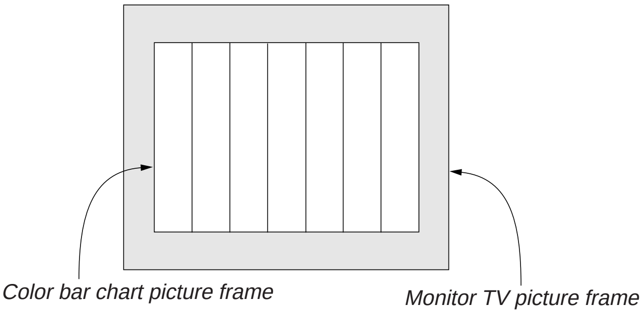


Fig. 5-1-9.

6. AGC Gain Calibration Adjustment

Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page 1 (Note)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	2E, 2F, 30, 31
Specified Value	Data1 : 0196 to 0283 Data2 : 0C97 to 13F4

Note: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
Display data

Switch setting:
1) NIGHT SHOT .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Adjusting method:
1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: 71, and press the PAUSE button of the adjustment remote commander.
(The AGC gain calibration adjustment is performed and the adjustment data is stored in page: F, address: 2E to 31.)
3) Select page: 6, address: 02, and check that the data is “01”.
4) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

Checking method:
1) Select page: 0, address: 03, and set data: 25.
2) Select page: 6, address: 9A, and set data: 03.
3) Select page: 6, address: 01, set data: 9B, and press the PAUSE button.
4) Select page: 6, address: 02, and check that the data is “01”.
5) Select page: 1, and check that the display data (Note) satisfies the specified value of data1.
6) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
7) Select page: 6, address: 9A, and set data: 99.
8) Select page: 6, address: 01, set data: 9B, and press the PAUSE button.
9) Select page: 6, address: 02, and check that the data is “01”.
10) Select page: 1, and check that the display data (Note) satisfies the specified value of data2.

Processing after Completing Adjustments
1) Select page: 6, address: 01, and set data: 00, and press the PAUSE button.
2) Select page: 6, address: 9A, and set data: 00.
3) Select page: 0, address: 01, and set data: 00.
4) Select page: 0, address: 03, and set data: 00.

7. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	4E, 50, FB, FC
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: NTSC 720H model: DCR-TRV410/TRV510
PAL 960H model: DCR-TRV410E/TRV510E

Switch setting:

1) NIGHT SHOT .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Adjusting method:

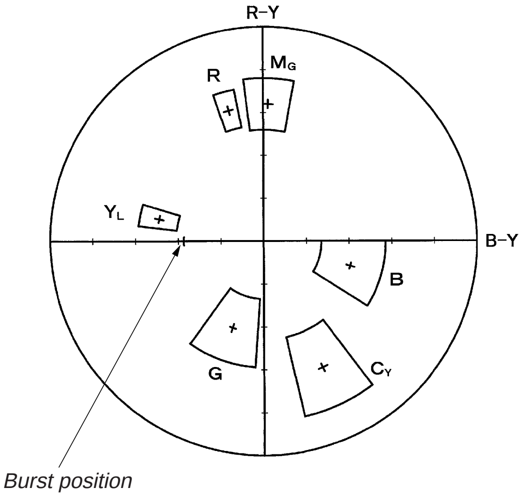
1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: E1, set data: 1B, and press the PAUSE button of the adjustment remote commander.
3) Select page: F, address: 27, set data: 3F, and press the PAUSE button.
4) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
5) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
6) Change the data of page: F, address: 4E, 50, FB and FC, and settle each color luminance point in each color reproduction frame.

   Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.

Processing after Completing Adjustments

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: F, address: E1, set data: 20, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

NTSC 720H model



PAL 960H model

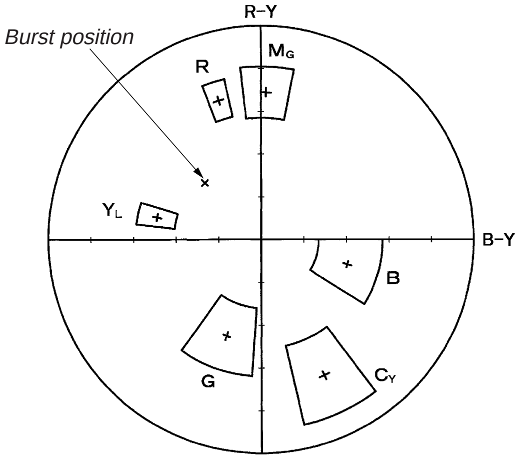


Fig. 5-1-10.

8. IRIS IN/OUT Adjustment

For the unit to judge if the white balance is indoors or outdoors in auto white balance operations, measure the light level and write it in the EEPROM.

If the level is not correct, the white balance will not be accurate.

Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	DDS display of EVF or LCD or TV monitor (Note)
Measuring Instrument	
Adjustment Page	F
Adjustment Address	56, 57

Note: The right four digits of the DDS display data of EVF or LCD or TV monitor.

CAM 00 00 00
CAM 00 XX XX
Lower two digits
Upper two digits

Switch setting:

1) NIGHT SHOT .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 03, and set data: 06.
3) Select page: D, address: 11, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 40, and set data: 02.
5) Select page: 6, address: 01, set data: 0B, and press the PAUSE button.
6) Read the DDS display data (Note), and take the upper two digits as D_1 and the lower two as D_2.
7) Convert D_1 to decimal notation, and obtain D_1'. (Refer to Table 5-4-1. “Hexadecimal - decimal conversion table” of “5-4. Service Mode”.)
8) Calculate D_3' using the following equations. (Equations 1 and 2 are for decimal notation calculation).

   When $D_2 \geqq D0$
   $D_3' = D_1' - 21$ Equation 1
   When $D_2 < D0$
   $D_3' = D_1' - 22$ Equation 2
9) Convert D_3' to hexadecimal notation, and obtain D_3.
10) Select page: F, address: 56, set data: D_3, and press the PAUSE button.
11) Select page: 6, address: 01, set data: 09, and press the PAUSE button.
12) Read the DDS display data (Note), and take the upper two digits as D_4 and the lower two as D_5.
13) Convert D_4 to decimal notation, and obtain D_4'. (Refer to Table 5-4-1. “Hexadecimal - decimal conversion table” of “5-4. Service Mode”.)
14) Calculate D_6' using the following equations. (Equations 3 and 4 are for decimal notation calculation).

   When $D_5 \geqq F0$
   $D_6' = D_4' - 13$ Equation 3
   When $D_5 < F0$
   $D_6' = D_4' - 14$ Equation 4
15) Convert D_6' to hexadecimal notation, and obtain D_6.
16) Select page: F, address: 57, set data: D_6, and press the PAUSE button.

Processing after Completing Adjustments

1) Select page: D, address: 11, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 0, address: 03, and set data: 00.
4) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
5) Select page: 6, address: 40, and set data: 00

9. Auto White Balance Standard Data Input

Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	32 to 35

Note 1: This adjustment should be carried out upon completion of "6. Color Reproduction Adjustment".

Note 2: Check that the data of page: 6, address: 02 is "00". If not, select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

Switch setting:

1) NIGHT SHOT .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Wait for 2 seconds.
3) Select page: 6, address: 01, set data: 11, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 01, set data: 0D, and press the PAUSE button.
   (When the standard data is take in, the data will be automatically input to page: F, address: 32 to 35.)
5) Select page: 6, address: 02, and check that the data is "01".
6) Perform "Auto White Balance Adjustment".

Processing after Completing Adjustments

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.

10. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note2)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	54, 55
Specified Value	720H model R ratio: 2BC0 to 2C40 B ratio: 5F40 to 5FC0 960H model R ratio: 2C40 to 2CC0 B ratio: 5D40 to 5DC0

Note 1: Perform "Auto White Balance Standard Data Input" before this adjustment.

Note 2: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
Display data

Note 3: 720H model: DCR-TRV410/TRV510
960H model: DCR-TRV410E/TRV510E

Switch setting:

1) NIGHT SHOT .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: E, address: 88 to 8B, and note down the data of each address.
4) Input the following data to page: E, addresses:88 to 8B.

Address		88	89	8A	8B
Data	720H model	2C	00	5F	80
	960H model	2C	80	5D	80

Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

5) Select page: 6, address: 01, set data: A7, and press the PAUSE button.
6) Select page: 6, address: 01, set data: A5, and press the PAUSE button.
   (The auto white balance adjustment is performed and the adjustment data is stored in page: F, address: 54 and 55.)
7) Select page: 6, address: 02, and check that the data is "01".
8) Select page: 6, address: 01, set data: 3F, and press the PAUSE button.
9) Select page: 0, address: 03, and set data: 04.
10) Select page: 1, and check that the display data (Note2) satisfies the R ratio specified value.
11) Select page: 0, address: 03, and set data: 05.
12) Select page: 1, and check that the display data (Note2) satisfies the B ratio specified value.
13) Select page: E, address: 88 to 8B, and input the data noted down at step 3).
    Note: After setting each data, be sure to press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments

1) Select page: 0, address: 01, and set data: 00.
2) Select page: 0, address: 03, and set data: 00.
3) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

11. White Balance Check

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-11. A to C

Switch setting:

1) NIGHT SHOT .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Checking method:

1) Check that the lens is not covered with either filter.
2) Select page: 6, address: 01, set data: 0F, and press the PAUSE button of the adjustment remote commander.
3) Check that the center of the white luminance point is within the circle shown Fig. 5-1-11. (A).
4) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
5) Select page: 6, address: 01, set data: 23, and press the PAUSE button.
6) Place the C14 filter on the lens.
7) Check that the center of the white luminance point settles in the circle shown Fig. 5-1-11. (B).
8) Remove the C14 filter, and place the ND filter 1.3 (1.0 +0.3) on the lens.
9) Check that the white luminance point stopped moving, and then remove the ND filter 1.3.
10) Check that the center of the white luminance point settles within the circle shown Fig. 5-1-11. (C).

Processing after Completing Adjustments

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

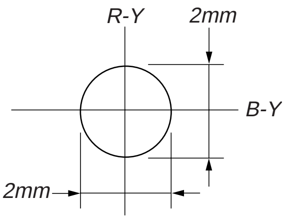


Fig. 5-1-11. (A)

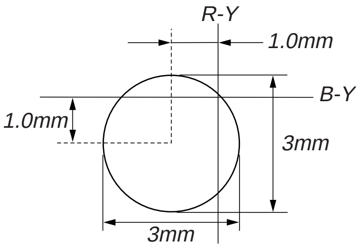


Fig. 5-1-11. (B)

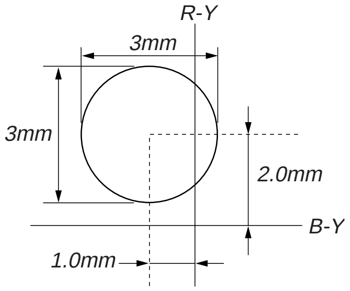


Fig. 5-1-11. (C)

12. Angular Velocity Sensor Sensitivity Data Check

- This adjustment is performed only when replacing the angular velocity sensor.
  Although this adjustment need not be performed when the circuit is damaged, etc., check the operations.
- Note down the sensitivity displayed on the angular velocity sensor of the repair parts. At this time, note down also to which board it was attached to.
  Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during hand-shake correction operations.

Precautions on the Parts Replacement

There are two types of repair parts.

Type A	ENC03JA
Type B	ENC03JB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Adjustment Page	F
Adjustment Address	5F, 60

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 5F, and check that the data is “52”.
3) Select page: F, address: 60, and check that the data is “52”.

Processing after Completing Adjustments

1) Select page: 0, address: 01, and set data: 00.
2) Check that the steady shot operations have been performed normally.

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN910 of the VC-213 board.

Connect the Measuring Instruments via the CPC-13 jig (J-6082-443-A).

The following table shows the Pin No. and signal name of CN910.

Pin No.	Signal Name	Pin No.	Signal Name
1	SWP	11	EVF VCO
2	AFC F0	12	EVF VG
3	BPF MONI	13	DV RF SWP
4	RF AGC IN	14	RF IN
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	RF AGC OUT	17	TMS
8	VC RF SWP	18	TCK
9	EVF BL	19	TDO
10	EVF BL 4.6V	20	TDI

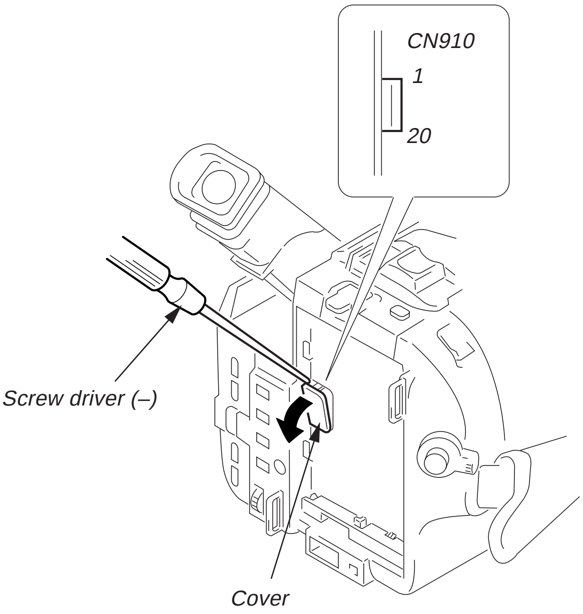


Fig. 5-1-12.

1. EVF Initial Data Input

Mode	Camera
Subject	Arbitrary
Adjustment Page	D
Adjustment Address	70 to 76, 78 to 7C

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data	Remark
70	7A	Fixed data
71	90	White balance adj.
72	60	White balance adj.
73	48	Fixed data
74	5A	Fixed data
75	70	VCO adj.
76	B0	Backlight consumption current adj.
78	D1	Fixed data
79	AC	Fixed data
7A	60	Bright adj.
7B	70	Contrast adj.
7C	90	Backlight consumption current adj.

2. VCO Adjustment (VF-126 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑪ of CN910 (EVF VCO) on VC-213 board
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	75
Specified Value	A=1.8 ± 0.1V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check the GND level of the oscilloscope.
3) Select page: D, address: 75, change the data and set the VCO output voltage (A) to the specified value.
4) Press the PAUSE button.
5) Select page: 0, address: 01, and set data: 00.

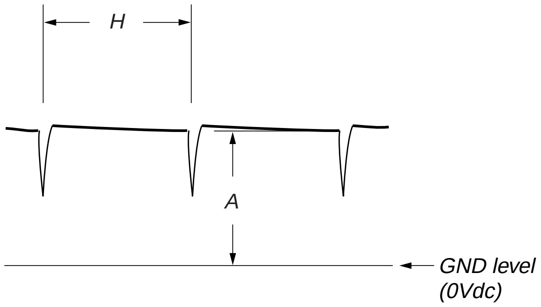


Fig. 5-1-13.

3. Bright Adjustment (VF-126 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN910 (EVF VG) on VC-213 board
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	7A
Specified Value	A=7.15 ± 0.1V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: D, address: 7A, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

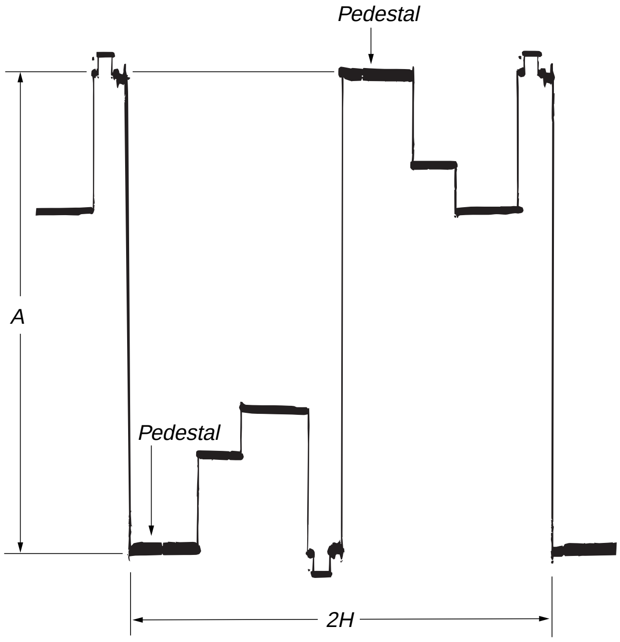


Fig. 5-1-14.

4. Contrast Adjustment (VF-126 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN910 (EVF VG) on VC-213 board
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	7B
Specified Value	A=1.95 ± 0.1V (NTSC) A=1.85 ± 0.1V (PAL)

Note : NTSC model : DCR-TRV410/TRV510
PAL model : DCR-TRV410E/TRV510E

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: D, address: 7B, change the data and set the voltage (A) between the pedestal (0 IRE) and 100 IRE to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

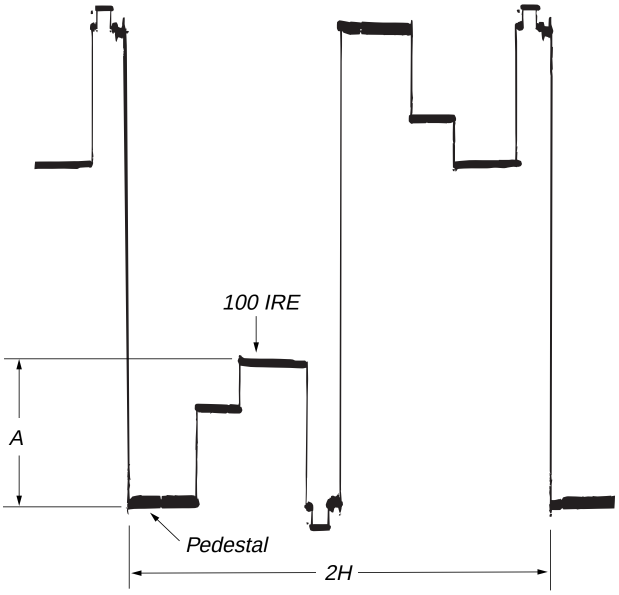


Fig. 5-1-15.

5. Backlight Consumption Current Adjustment (VF-126 board)

Set the backlight luminance and color temperature.
If deviated, the image may become dark or bright.

Mode	Camera
Subject	Arbitrary
Measurement Point	+ Probe: Pin ⑩ of CN910 (EVF BL 4.6V) on VC-213 board – Probe: Pin ⑨ of CN910 (EVF BL) on VC-213 board
Measuring Instrument	Digital voltmeter
Adjustment Page	D
Adjustment Address	76, 7C
Specified Value	NORMAL mode : A=16 ± 1mVdc BRIGHT mode : A=26 ± 1mVdc

Note: Adjust 30 seconds after running on the power supply.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 7C, change the data and set the voltage difference (A) between Pin ⑩ of CN910 (EVF BL 4.6V) and Pin ⑨ of CN910 (EVF BL) to the specified value of NORMAL mode.
3) Press the PAUSE button.
4) Select page: D, address: 76, change the data and set the voltage difference (A) between Pin ⑩ and Pin ⑨ to the specified value of BRIGHT mode..
5) Press the PAUSE button.
6) Select page: 0, address: 01, and set data: 00.

6. White Balance Adjustment (VF-126 board)

Correct the white balance.

If deviated, the reproduction of the EVF screen may degenerate.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on EVF screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	71, 72
Specified Value	The EVF screen should not be colored.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 0B, and press the PAUSE button.
4) Select page: D, address: 71 and 72, set the data to the initial value.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
71	90
72	60

5) Check that the EVF screen is not colored. If colored, change the data of page: D, address: 71 and 72 so that the EVF screen is not colored.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.

6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

1-5. LCD SYSTEM ADJUSTMENTS

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the LCD BRIGHT to the center.
Set the LCD COLOR (Menu display) to the center.

[Adjusting connector]

Most of the measuring points for adjusting the LCD display are concentrated in the following connector.
CN5501 of the PD-106 board
Connect the Measuring Instruments via the multi CPC jig (J-6082-311-A).
The following table shows the Pin No. and signal name of the connector.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	VCO VOLTAGE.
3	VG	4	PANEL COM
5	VR	6	N.C.
7	SYNC	8	H START
9	GND	10	GND

1. LCD Initial Data Input (1)

Mode	VTR stop
Signal	Arbitrary
Adjustment Page	E
Adjustment Address	C3, C4

Adjusting method:

1) Select page: 0, address:01, and set data: 01.
2) Select page: E, and input the data in the following table.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address:01, and set data: 00.

Address	Data	Remark
C3	AB	Fixed data
C4	DA	Fixed data

2. LCD Initial Data Input (2)

Mode	VTR stop
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	80 to 85, 88 to 8F

Adjusting method:

1) Select page: 0, address:01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address:01, and set data: 00.

Address	Data	Remark
80	98	White balance adj.
81	7B	White balance adj.
82	80	D range adj.
83	89	V-COM level adj.
84	80	VCO adj.
85	80	V-COM adj.
88	80	Fixed data
89	80	Fixed data
8A	84	Bright adj.
8B	78	Color adj.
8C	8D	Contrast adj.
8D	52	Fixed data
8E	99	Fixed data
8F	00	Fixed data

3. VCO Adjustment (PD-106 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ② of CN5501 (VCO VOLTAGE)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	84
Specified Value	$A = 1.70^{+0.03}_{-0.05}$ V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 84, change the data and set the VCO VOLTAGE (A) to the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

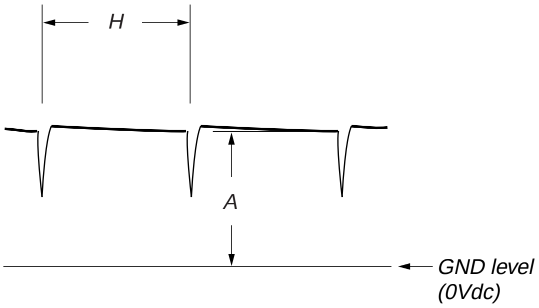


Fig. 5-1-16.

4. D range Adjustment (PD-106 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ③ of CN5501 (VG) External trigger : Pin ④ of CN5501 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	82
Specified Value	A=3.01 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: D, address: 82, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

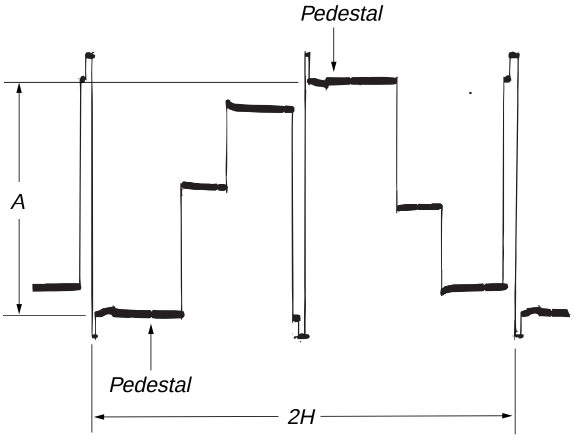


Fig. 5-1-17.

5. Bright Adjustment (PD-106 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ③ of CN5501 (VG) External trigger : Pin ④ of CN5501 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8A
Specified Value	A=1.45 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: 2, address: 0E, and set data: 40.
5) Select page: D, address: 8A, change the data and set the voltage (A) between the pedestal and gamma1 level to the specified value. (The data of address: 8A should be “41” to “BF”.)
6) Press the PAUSE button.
7) Select page: 2, address: 0E, and set data: 00.
8) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.

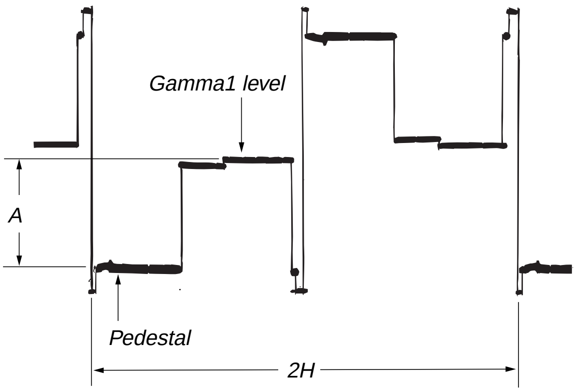


Fig. 5-1-18.

6. Contrast Adjustment (PD-106 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ③ of CN5501 (VG) External trigger : Pin ④ of CN5501 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8C
Specified Value	A=2.38 ± 0.07V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: D, address: 8C, change the data and set the voltage (A) between the pedestal (0 IRE) and 100 IRE to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

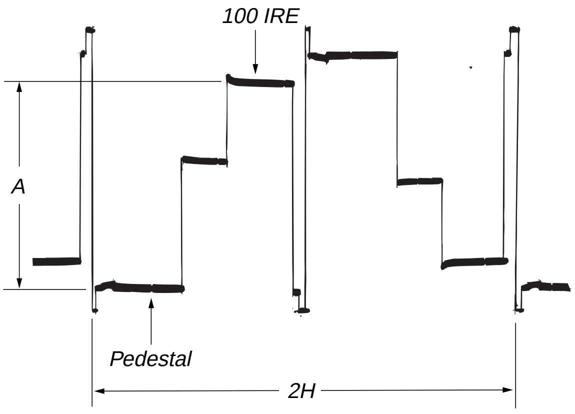


Fig. 5-1-19.

7. V-COM Level Adjustment (PD-106 board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN5501 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	83
Specified Value	A=5.20 ± 0.05V

Note : Perform “Bright Adjustment” and “Contrast Adjustment” before this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
4) Select page: D, address: 83, change the data and set the PANEL COM signal level (A) to the specified value.
5) Press the PAUSE button.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

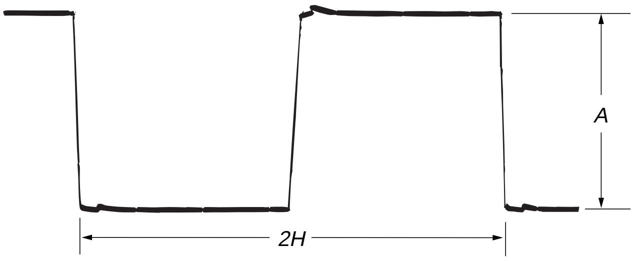


Fig. 5-1-20.

8. Color Adjustment (PD-106 board)

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ③ of CN5501 (VG) External trigger : Pin ④ of CN5501 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8B
Specified Value	A=0.22 ± 0.05V (NTSC) A=0.20 ± 0.05V (PAL)

Note : NTSC model : DCR-TRV410/TRV510
PAL model : DCR-TRV410E/TRV510E

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
3) Select page: C, address: 95, set data: 10, and press the PAUSE button.
4) Select page: C, address: 96, set data: 10, and press the PAUSE button.
5) Select page: D, address: 8B, change the data and set the voltage (A) between the white and green to the specified value.
6) Press the PAUSE button.
7) Select page: C, address: 95, set data: 20, and press the PAUSE button.
8) Select page: C, address: 96, set data: 20, and press the PAUSE button.
9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.

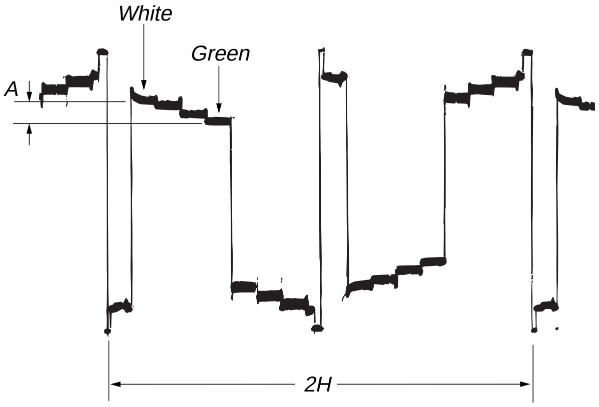


Fig. 5-1-21.

9. V-COM Adjustment (PD-106 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	85
Specified Value	The brightness difference between the section A and section B is minimum.

Note : Perform "Bright Adjustment" and "Contrast Adjustment" before this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 0F, and press the PAUSE button.
4) Select page: 2, address: 0E, and set data: 20.
5) Select page: D, address: 85, change the data so that the brightness of the section A and that of the section B is equal.
6) Press the PAUSE button.
7) Select page: 2, address: 0E, and set data: 00.
8) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.

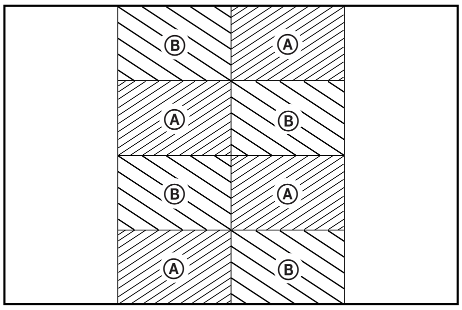


Fig. 5-1-22.

10. White Balance Adjustment (PD-106 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	80, 81
Specified Value	The LCD screen should not be colored.

Note : Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC5502

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 0A, and press the PAUSE button.
4) Select page: D, address: 80 and 81, and set the data to the initial value.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
80	98
81	7B

5) Check that the LCD screen is not colored. If colored, change the data of page: D, address: 80 and 81 so that the LCD screen is not colored.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

5-2. MECHANISM SECTION ADJUSTMENT

Mechanism Section adjustments, checks, and replacement of mechanism parts, refer to the separate volume “8mm Video Mechanism Adjustment Manual Ⅶ B Mechanism ”.

Note 1: NTSC model: DCR-TRV410/TRV510
PAL model: DCR-TRV410E/TRV510E

2-1. Hi8/STANDARD 8mm MODE

2-1-1. OPERATING WITHOUT CASSETTE

1) Refer to “Section 2. DISASSEMBLY” and supply the power with the cabinet assembly removed. (So that the mechanical deck can be operated.)
2) Connect the adjustment remote commander to the LANC jack.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Close the cassette compartment without loading a cassette and complete loading.
5) Select page: 0, address: 01, and set data: 01.
6) Select page: F, address: 2C, set data: 01, and press the PAUSE button of the adjustment remote commander.
7) Select page: D, address: 10, set data: 10, and press the PAUSE button of the adjustment remote commander.
8) Disconnect the power supply of the unit.
   By carrying out the above procedure, the unit can be operated without loading a cassette. (Note2)
   Be sure to carry out “Processing after Operations” after checking the operations.
   Set the data of page: D, address: 10 to “12”, if the sensor ineffective mode, forced VTR power supply ON mode is to be used together.
   Note 2: Except for the camera recording mode and VTR recording mode.

[Procedure after checking operations]

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 2C, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.
5) Disconnect the power supply of the unit.

2-1-2. TAPE PATH ADJUSTMENT

1. Preparations for Adjustment

1) Clean the tape path face (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 01.
5) Select page: 2, address: 2E, and set data: 02.
6) Select page: F, address: 2C, set data: 04, and press the PAUSE button of the adjustment remote commander.
   (Be sure to perform “Processing after operation” after completing adjustments.)
7) Connect the oscilloscope to VC-213 board CN910 via CPC-13 jig (J-6082-443-A).
   Channel 1: VC-213 board, CN910 Pin ⑤
   External trigger: VC-213 board, CN910 Pin ⑧
8) Playback Hi8/standard 8mm alignment tape for tracking.
   (WR5-1NP(NTSC))
   (WR5-1CP(PAL))
9) Check that the oscilloscope RF waveform is flat at the entrance and exit.
   If not flat, adjust according to the separate volume “8mm Video Mechanical Adjustment Manual Ⅶ B Mechanism ”.
10) Perform “Processing after operations”, after completing adjustment.

CN910 of VC-213board

Pin No.	Signal Name	Pin No.	Signal Name
1	SWP	11	EVF VCO
2	AFC F0	12	EVF VG
3	BPF MONI	13	DV RF SWP
4	RF AGC IN	14	RF IN
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	RF AGC OUT	17	TMS
8	VC RF SWP	18	TCK
9	EVF BL	19	TDO
10	EVF BL 4.6V	20	TDI

Table 5-2-1.

[Procedure after operations]

1) Connect the adjustment remote commander, and turn on the HOLD switch.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 2, address: 2E, and set data: 00.
4) Select page: F, address: 2C, set data: 00, and press the PAUSE button of the adjustment remote commander.
5) Select page: 0, address: 01, and set data: 00.
6) Remove the power supply from the unit.

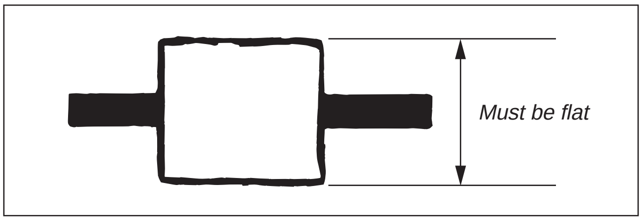


Fig. 5-2-1.

2-2. DIGITAL8 MODE

2-2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0C, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the record mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

2-2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0B, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the playback mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

2-2-3. OVERALL TAPE PATH CHECK

1. Recording of the tape path check signal

1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Set to the camera recording mode.
5) Select page: 3, address: 1C, set data: 5D, and press the PAUSE button of the adjustment remote commander.
6) Record for several minutes.
7) Release the camera recording mode.
8) Select page: 3, address: 1C, set data: 00, and press the PAUSE button.

2. Tape path check

1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-213 board CN910 via the CPC-13 jig (J-6082-443-A).
   Channel 1: VC-213 board, CN910 Pin ⑯ (Note)
   External trigger: VC-213 board, CN910 Pin ⑬
   Note: Connect a 75Ω resistor between Pins ⑯ of CN910 and ⑥ (GND).
5) Select page: 2, address: 2E, and set data: 01.
6) Playback the tape path check signal.
7) Select page: 3, address: 33, and set data: 08.
8) Select page: 3, address: 26, and set data: 31.
9) Check that the oscilloscope RF waveform is flat at the entrance and exit.
   If not flat, perform “2-1-2. TAPE PATH ADJUSTMENT “ of “2-1. Hi8/STANDARD 8mm MODE”.
10) Select page: 3, address: 26, and set data: 00.
11) Select page: 3, address: 33, and set data: 00.
12) Select page: 2, address: 2E, and set data: 00.

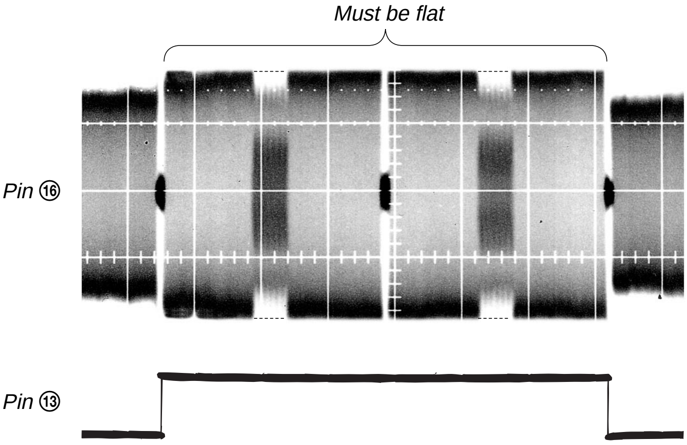


Fig. 5-2-2.

5-3. VIDEO SECTION ADJUSTMENT

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

Note: NTSC model: DCR-TRV410/TRV510
PAL model: DCR-TRV410E/TRV510E

3-1-1. Equipment to Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band width above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Digital8 alignment tapes
    - SW/OL standard (WR5-2D)
      Parts code: 8-967-993-22
    - Audio operation check for NTSC (WR5-3ND)
      Parts code: 8-967-993-32
    - System operation check for NTSC (WR5-5ND)
      Parts code: 8-967-993-42
    - BIST check for NTSC (WR5-6ND)
      Parts code: 8-967-993-51
    - Audio operation check for PAL (WR5-3CD)
      Parts code: 8-967-993-37
    - System operation check for PAL (WR5-5CD)
      Parts code: 8-967-993-47
    - BIST check for PAL (WR5-6CD)
      Parts code: 8-967-993-56
12) NTSC Hi8/standard8 mm alignment tapes (For NTSC model)
    - For tracking adjustment (WR5-1NP)
      Parts code : 8-967-995-02
    - For video frequency characteristics adjustment (WR5-7NE)
      Parts code : 8-967-995-13
    - For checking Standard 8 mode operations
      For LP (WR5-4NL)
      Parts code : 8-967-995-51
      For SP (WR5-5NSP)
      Parts code : 8-967-995-42

    Note : The following alignment tapes can also be used.
    WR5-4NSP (8-967-995-41)
    - For checking Hi8 mode operations
      For LP (WR5-8NLE)
      Parts code : 8-967-995-52
      For SP (WR5-8NSE)
      Parts code : 8-967-995-43
    - For Checking AFM stereo operations (WR5-9NS)
      Parts code : 8-967-995-23
    - For BPF adjustment (WR5-11NS)
      Parts code : 8-967-995-71
13) PAL Hi8/standard8 mm alignment tapes (For PAL model)
    - For tracking adjustment (WR5-1CP)
      Parts code : 8-967-995-07
    - For video frequency characteristics adjustment (WR5-7CE)
      Parts code : 8-967-995-18
    - For checking Standard 8 mode operations
      For LP (WR5-4CL)
      Parts code : 8-967-995-56
      For SP (WR5-5CSP)
      Parts code : 8-967-995-47

    Note : The following alignment tapes can also be used.
    1) WR5-3CL (8-967-995-36)
    2) WR5-4CSP (8-967-995-46)
    - For checking Hi8 mode operations
      For LP (WR5-8CLE)
      Parts code : 8-967-995-57
      For SP (WR5-8CSE)
      Parts code : 8-967-995-48
    - For Checking AFM stereo operations (WR5-9CS)
      Parts code : 8-967-995-28
    - For BPF adjustment (WR5-11CS)
      Parts code : 8-967-995-76
14) Adjustment remote commander (J-6082-053-B)
15) CPC-13 jig (J-6082-443-A)
16) Power code (J-6082-223-A)

    Note : Connect the adjustment remote commander to the LANC jack, and set the HOLD switch to the "ADJ" side.
17) IR receiver jig (J-6082-383-A)
18) Extension cable (70P, 0.5mm)
    For extension between the DD-117 board (CN931) and the VC-213 board (CN914) (J-6082-439-A)

3-1-2. Precautions on Adjusting

1) The adjustments of this unit are performed in the VTR mode or camera mode.
   To set to the VTR mode, set the power switch to “VTR or PLAYER” or set the “Forced VTR Power ON mode” using the adjustment remote commander (Note 1).
   To set to the Camera mode, set the power switch to “CAMERA” or set the “Forced Camera Power ON mode” using the adjustment remote commander (Note 2).
   After completing adjustments, be sure to exit the “Forced VTR Power ON Mode” or “Forced Camera Power ON Mode”. (Note 3)
2) The front panel block (MA-356 board, focus ring, microphone unit) need not be connected except during “Battery end adjustment” and “IR transmitter adjustment”. To remove, disconnect the following connectors.
   VC-213 board CN903 (22P 0.5mm)
3) By setting the “Forced VTR Power ON mode” or “Forced Camera Power ON mode”, the video section can be operate even if even if the cabinet (R) block (Camera function switch (CF-64 board), LCD block, viewfinder. power switch) has been removed. But removing the cabinet (R) block (removing the VC-213 board CN911) means removing the lithium 3V power supply (CF-64 board BH001) , data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) block has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data and data on history use (data of page: 2, address: A2 to AA). (Refer to “SELF-DIAGNOSIS FUNCTION” for the self-diagnosis data, and to “5-4. Service Mode” for the data on the history use.) To remove the cabinet (R), disconnect the following connectors.
   1. VC-213 board CN911 (50P, 0.5mm)
   2. DD-117 board CN933 (10P, 1.0mm)
4) The lens block (CD-212/213 board) and the intelligent accessory shoe need not be connected except during “Battery end adjustment”. To remove, disconnect the following connectors.
   1. VC-213 board CN501 (16P, 0.5mm)
   2. VC-213 board CN551 (24P, 0.5mm)
   3. Intelligent accessory shoe (8P, 0.5mm)

Note 1: Setting the “Forced VTR Power ON” mode (VTR mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
   The above procedure will enable the VTR power to be turned on with the front panel block removed.
   After completing adjustments, be sure to exit the “Forced VTR Power ON mode”.

Note 2: Setting the “Forced Camera Power ON” mode (Camera mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
   The above procedure will enable the camera power to be turned on with the front panel block removed.
   After completing adjustments, be sure to exit the “Forced Camera Power ON mode”.

Note 3: Exiting the “Forced Power ON” mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

Note 4: 720H model: DCR-TRV410/TRV510
960H model: DCR-TRV410E/TRV510E

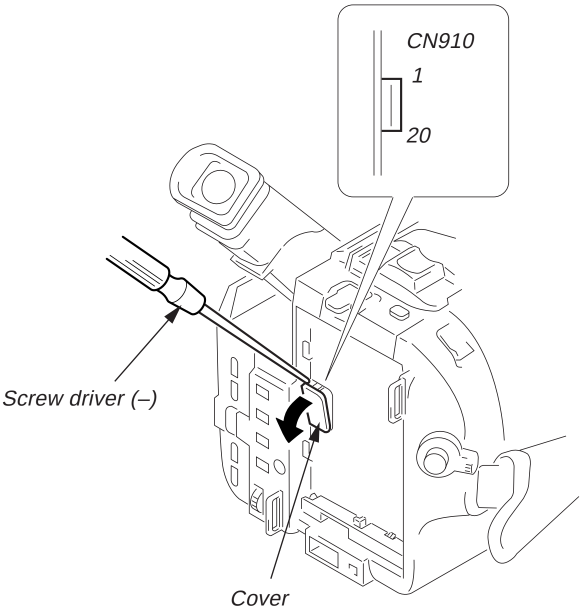
	CD board
720H model	CD-212
960H model	CD-213

3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-213 board CN910. Connect the measuring instruments via the CPC-13 jig (J-6082-443-A). The following table lists the pin numbers and signal names of CN910.

Pin No.	Signal Name	Pin No.	Signal Name
1	SWP	11	EVF VCO
2	AFC F0	12	EVF VG
3	BPF MONI	13	DV RF SWP
4	RF AGC IN	14	RF IN
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	RF AGC OUT	17	TMS
8	VC RF SWP	18	TCK
9	EVF BL	19	TDO
10	EVF BL 4.6V	20	TDI

Table 5-3-1.


CN910
1
20
Screw driver (–)
Cover

3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-3-2 and perform the adjustments.

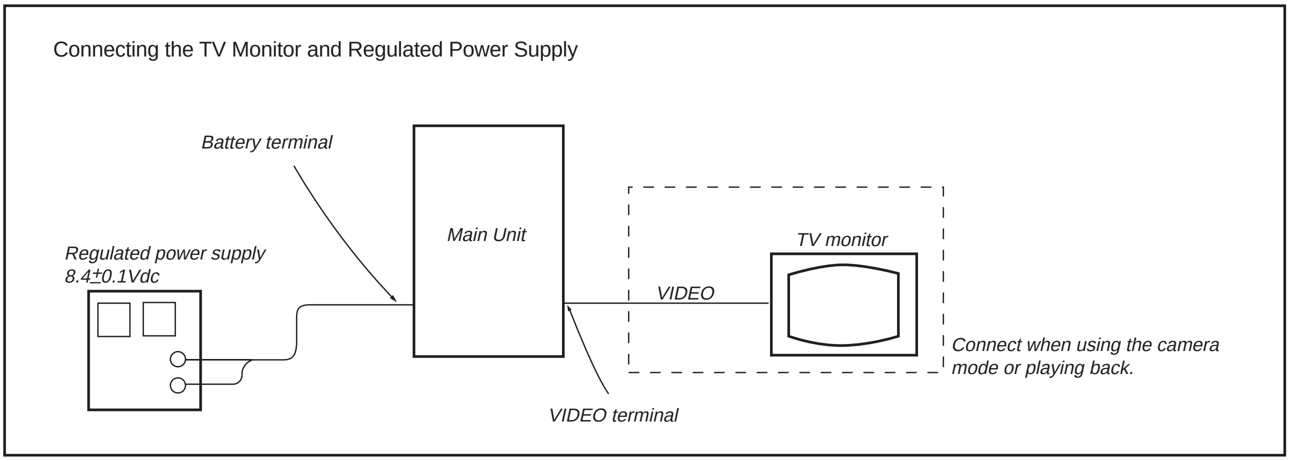

Connecting the TV Monitor and Regulated Power Supply
Battery terminal
Main Unit
Regulated power supply
8.4±0.1Vdc
TV monitor
VIDEO
Connect when using the camera mode or playing back.
VIDEO terminal

Fig. 5-3-2.

3-1-5. Alignment Tape

The following table lists alignment tapes which are available.
Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

Digital8 alignment tape

Name	Usage
SW/OL standard (WR5-2D)	Switching position adjustment
Audio operation check (WR5-3ND (NTSC), WR5-3CD (PAL))	Audio system adjustment
System operation check (WR5-5ND (NTSC), WR5-5CD (PAL))	Operation check
BIST check (WR5-6ND (NTSC), WR5-6CD (PAL))	BIST check

Hi8/standard 8 mm alignment tape

Name	Recording mode	Tape type	Tape speed	Usage
Tracking (WR5-1NP(NTSC), WR5-1CP(PAL))	Standard 8 mm	MP	SP	Tape path adjustment, Switching position adjustment
Video frequency characteristics (WR5-7NE(NTSC), WR5-7CE(PAL))	Hi8	ME	SP(NTSC) LP(PAL)	Frequency characteristics adjustment
Operation check (WR5-5NSP(NTSC), WR5-5CSP(PAL))	Standard 8 mm	MP	SP	Operation check
Operation check (WR5-8NSE(NTSC), WR5-8CSE(PAL))	Hi8	ME	SP	
Operation check (WR5-4NL(NTSC), WR5-4CL(PAL))	Standard 8 mm	MP	LP	
Operation check (WR5-8NLE(NTSC), WR5-8CLE(PAL)	Hi8	ME	LP	
AFM stereo operation check WR5-9NS(NTSC), WR5-9CS(PAL)	Standard 8 mm	MP	SP	AFM stereo Operation check
BPF adjustment WR5-11NS(NTSC), WR5-11CS(PAL)	Standard 8 mm	MP	SP	BPF adjustment

Tape type

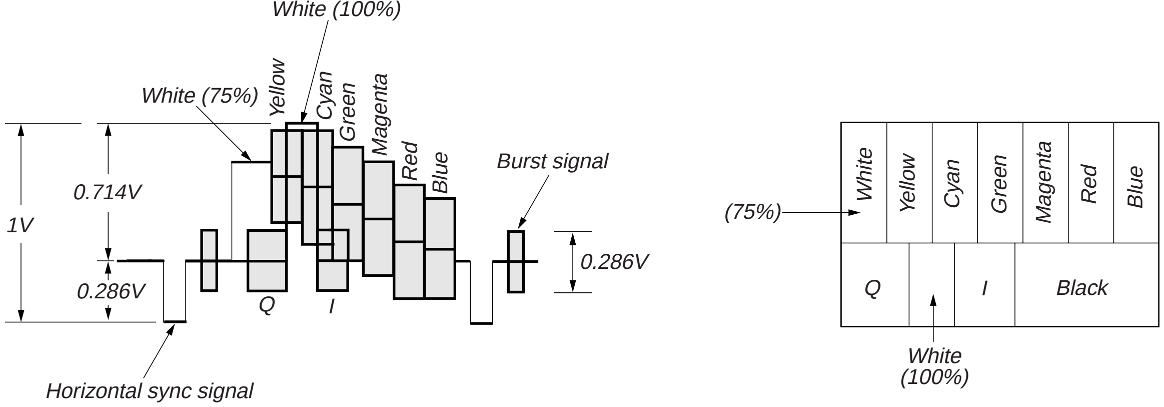
ME .... Particle type metal tape
MP .... Evaporated type metal tape

Table. 5-3-2.

Fig. 5-3-3. Shows the color bar signals recorded on the alignment tape.

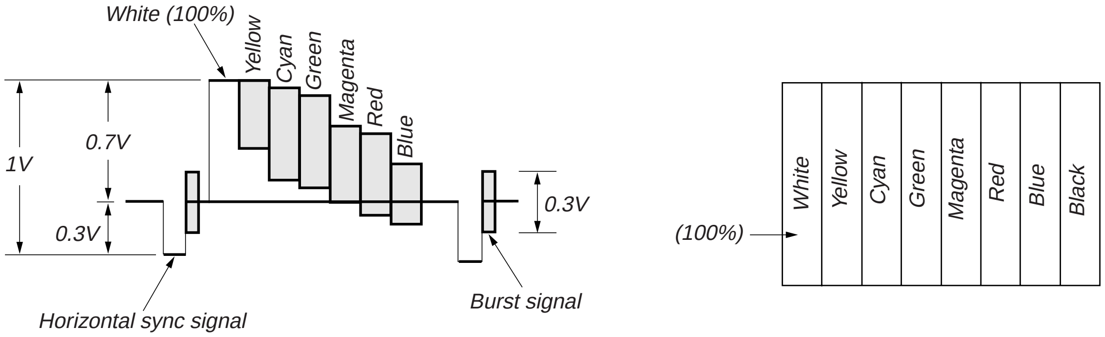
Note : Measure using the VIDEO terminal (Terminated at 75 Ω).

For NTSC model


White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst signal
0.714V
1V
0.286V
Q
I
0.286V
Horizontal sync signal
(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Q
I
Black
White
(100%)

Color bar signal waveform *Color bar pattern*

For PAL model


White (100%)
Yellow
Cyan
Green
Magenta
Red
Blue
1V
0.7V
0.3V
0.3V
Horizontal sync signal
Burst signal
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black

Color bar signal waveform *Color bar pattern*

Fig. 5-3-3. Color Bar Signal of the Alignment Tape

3-1-6. Input/output Level and Impedance

Video input/output
  Phono jack, 1Vp-p, 75Ω, unbalanced, sync negative
S video input/output
  4-pin mini DIN
  Luminance signal:
    1Vp-p, 75Ω, unbalanced, sync negative
  Chrominance signal:
    0.286Vp-p, 75Ω, unbalanced (NTSC)
    0.300Vp-p, 75Ω, unbalanced (PAL)
Audio input/output
  Phono jack:
  Input: -7.5dBs, input impedance more than 47kΩ
  Output: -7.5dBs, (at load impedance 47kΩ), output impedance less than 2.2kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of B, C, D, E, F Page Data

If the B, C, D, E, F page data is erased due to some reason, perform "1-2. INITIALIZATION OF B, C, D, E, F PAGE DATA", of "5-1. CAMERA SECTION ADJUSTMENT"

2. Battery End Adjustment (VC-213 board)

Set the battery end voltage.
If the voltage is incorrect, the life of the battery will shorten.
The image at the battery end will also be rough.

Mode	Camera recording
Subject	Arbitrary
Measurement Point	LCD display of the adjustment remote commander
Measuring Instrument	
Adjustment Page	D
Adjustment Address	30 to 34

Note 1: The lens block and cabinet (R) must be connected.

Switch setting

1) AUTO FOCUS .... OFF
2) LCD screen .... Closed
3) NIGHT SHOT .... OFF

Connection:

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-3-4.

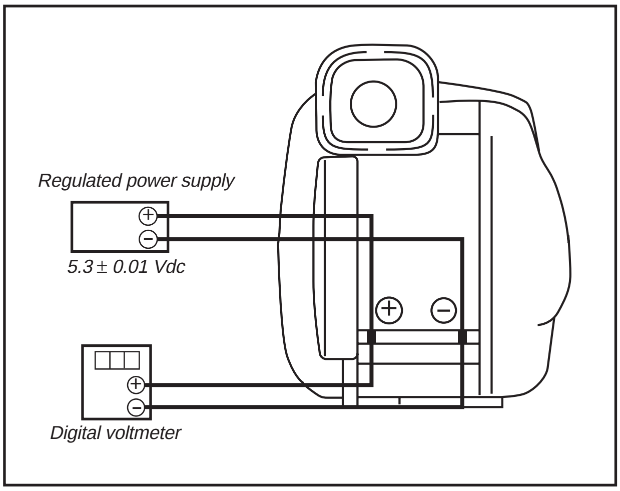


Fig. 5-3-4.

Adjusting method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.1 ± 0.1Vdc.
2) Turn off the power supply.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Turn on the power supply.
5) Load a cassette, and set to the camera recording mode.
6) Select page: 0, address: 01, and set data: 01.
7) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.30 ± 0.01Vdc.
8) Select page: 2, address: 5D, read the data, and this data is named Dref.
9) Select page: D, address: 30, set data: Dref, and press the PAUSE button of the adjustment remote commander.
10) Convert Dref to decimal notation, and obtain Dref'. (Refer to Table 5-4-1. "Hexadecimal-decimal conversion table" of "5-4. Service Mode".)
11) Calculate D_{31}', D_{32}', D_{33}' and D_{34}' using following equations (decimal calculation), convert it to a hexadecimal number, and input each adjustment address.

    Address: 31 $D_{31}' = \text{Dref}' + 5$
    Address: 32 $D_{32}' = \text{Dref}' + 32$
    Address: 33 $D_{33}' = \text{Dref}' + 53$
    Address: 34 $D_{34}' = \text{Dref}' + 64$

    Note 2: After setting each data, be sure to press the PAUSE button.
12) Select page: 0, address: 01, and set data: 00.

3-3. SERVO AND RF SYSTEM ADJUSTMENTS

Before perform the servo and RF system adjustments, check that the specified value of “27 MHz/36MHz Origin Oscillation Adjustment” and “Hi8/standard 8mm 14 MHz Origin Oscillation Adjustment” of “3-4. VIDEO SYSTEM ADJUSTMENT” is satisfied.

Adjusting Procedure:

1. PLL f_0 & LPF f_0 Pre-adjustment
2. Switching position adjustment
3. AGC center level adjustment
4. APC & AEQ adjustment
5. PLL f_0 & LPF f_0 final adjustment
6. Hi8/standard 8mm Switching Position Adjustment
7. CAP FG Offset Adjustment

1. PLL f_0 & LPF f_0 Pre-adjustment (VC-213 board)

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	Bit values of bit 2, bit 3 and bit 6 are “0”

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 02, and check that the data changes to “00”.
4) Select page: 3, address: 03, and check that bit values of bit2, bit3 and bit6 are “0”.
   If bit value of bit 2, bit 3 or bit 6 is “1”, there are errors. (For the error contents, see the following table. For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

Bit value of page: 3, address: 03	Error contents
bit 6 = 1	LPF f_0 adjustment is defective
bit 3 = 1	PLL f_0 fine adjustment is defective
bit 2 = 1	PLL f_0 fine adjustment is defective

If bit value of bit 2 or bit 3 is “1”, select page: C, address: 21, set the following data, and press the PAUSE button, and repeat steps 2) to 4).

	Setting data
When the data of page: C, address: 21 is “CA”.	CE
When the data of page: C, address: 21 is “CE”.	C6
When the data of page: C, address: 21 is “C6”.	D2
When the data of page: C, address: 21 is “D2”	C2

5) Select page: 0, address: 01, and set data: 00.

2. Switching Position Adjustment (VC-213 board)

To obtain normal playback waveform output, adjust the switching position.

Mode	VTR playback
Signal	Digital8 alignment tape : SW/OL standard (WR5-2D)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	00

Adjusting method:

1) Insert the Digital8 SW/OL reference tape and enter the VTR STOP mode.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 21, and check that the data is “02”.
   Note: If the data of page: 3, address: 21 is other than “72”, the tape top being played. After playing the tape for 1 to 2 seconds, perform step 4) and higher.
4) Select page: 3, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 02, and check that the data changes to “00”.
6) Select page: 3, address: 03, and check that the data is “00”.
   Note: If bit 0 of page: 3, address: 03 data is “1”, the A channel is defective. If bit 1 is “1”, the B channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)
7) Select page: 0, address: 01, and set data: 00.

When the A channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC402) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC104 (TRX)

When the B channel is defective

Data of page: C, address: 12	Contents of defect
E8	Adjustment data is out of range
E7	No data is returned from IC104 (TRX)

3. AGC Center Level Adjustment (VC-213 board)

Mode	Camera record and playback
Subject	Arbitrary
Measurement Point	Pin ⑯ of CN910 (RF MON) (Note 1) External trigger : Pin ⑬ of CN910 (DV RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	The display data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑯ and Pin ⑥ (GND) of CN910.
75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 54, set data: C8, and press the PAUSE button of the adjustment remote commander.
3) Record the camera signal for a minute.
4) Select page: 2, address: 2E, and set data: 01.
5) Playback the recorded segment.
6) Select page: 3, address: 33, and set data: 08.
7) Confirm that the playback RF signal is stable.
8) Select page: 3, address: 01, set data: 23, and press the PAUSE button.
9) Select page: 3, address: 02, and check that the data is “00”.
10) Select page: 3, address: 03, and check that the data is “00”.
    Note 2 : If the data of page: 3, address: 03 is other than “00”, adjustment has errors.
11) Select page: 3, address: 33, and set data: 00.
12) Select page: 2, address: 2E, and set data: 00.
13) Select page: C, address: 54, set data: CC, and press the PAUSE button.
14) Select page: 0, address: 01, and set data: 00.

4. APC & AEQ Adjustment (VC-213 board)

Mode	Camera record and playback
Subject	Arbitrary
Measurement Point	Pin ⑯ of CN910 (RF MON) (Note 1) External trigger : Pin ⑬ of CN910 (DV RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 73
Specified Value	The display data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑯ and Pin ⑥ (GND) of CN2904.
75Ω resistor (Parts code: 1-247-804-11)

Note 2: Use a Hi8 MP tape.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 54, set data: C8, and press the PAUSE button of the adjustment remote commander.
3) Record the camera signal for a minute.
4) Select page: 2, address: 2E, and set data: 01.
5) Playback the recorded segment.
6) Select page: 3, address: 33, and set data: 08.
7) Confirm that the playback RF signal is stable.
8) Select page: 3, address: 01, set data: 07, and press the PAUSE button.
9) Select page: 3, address: 02, and check that the data changes from “07” to “00” in about 20 seconds after pressing the PAUSE button.
10) Select page: 3, address: 03, and check that the data is “00”.
    Note 3: If the data of page: 3, address: 03 is other than “00”, adjustment has errors.
11) Select page: 3, address: 33, and set data: 00.
12) Select page: 2, address: 2E, and set data: 00.
13) Select page: C, address: 54, set data: CC, and press the PAUSE button.
14) Select page: 0, address: 01, and set data: 00.

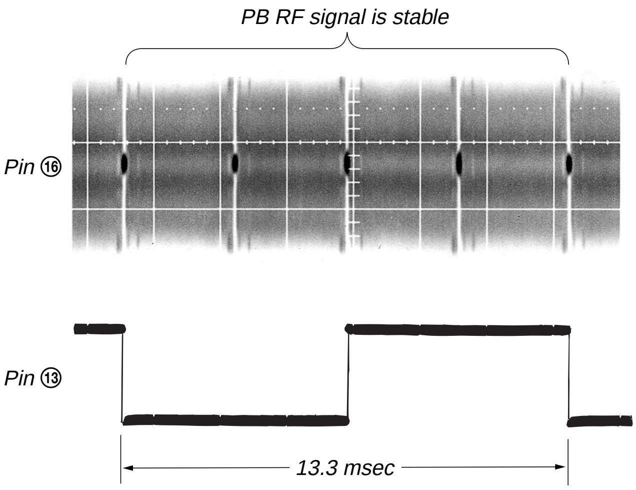


Fig. 5-3-5.

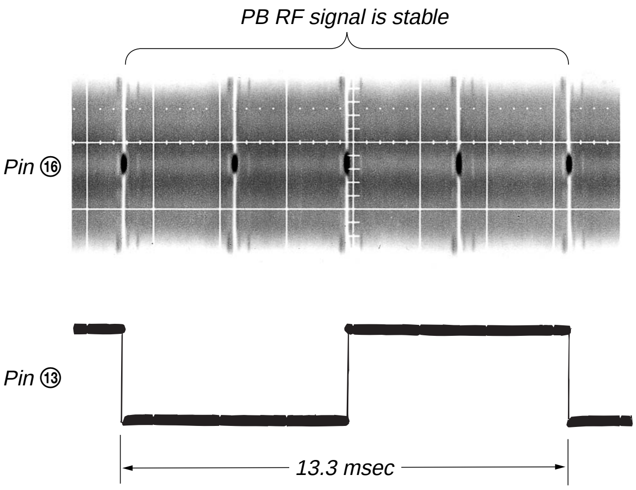


Fig. 5-3-6.

5. PLL f_0 & LPF f_0 Final Adjustment (VC-213 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	Bit values of bit2, bit3 and bit6 are “0”

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 02, and check that the data changes to “00”.
4) Select page: 3, address: 03, and check that bit values of bit2, bit3 and bit6 are “0”.
   If bit value of bit 2, bit 3 or bit 6 is “1”, there are errors. (For the error contents, see the following table. For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

Bit value of page: 3, address: 03	Error contents
bit 6 = 1	LPF f_0 adjustment is defective
bit 3 = 1	PLL f_0 fine adjustment is defective
bit 2 = 1	PLL f_0 fine adjustment is defective

5) Select page: 0, address: 01, and set data: 00.

6. Hi8/standard 8mm Switching Position Adjustment (VC-213 board)

If deviated in this case causes switching noise or jitter on the Hi8/standard 8mm mode played back screen.

Mode	Playback
Signal	Hi8/standard 8mm alignment tape: For tracking adjustment (WR5-1NP(NTSC)) (WR5-1CP(PAL))
Measurement Point	CH1: Pin ⑧ of CN910 (VC RF SWP) CH2: Pin ⑤ of CN910 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	3E, 3F
Specified Value	t1=0 ± 10 µsec

Adjusting Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 2C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 2E, and set data: 02.
4) Set to the playback mode.
5) Select page: F, address: 3E, change the data and minimize “t1”, and then press the PAUSE button. (Coarse adjustment)
6) Select page: F, address: 3F, change the data and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
7) Press the PAUSE button.
8) Select page: F, address: 2C, set data: 00, and press the PAUSE button.
9) Select page: 2, address: 2E, and set data: 00.
10) Select page: 0, address: 01, and set data: 00.

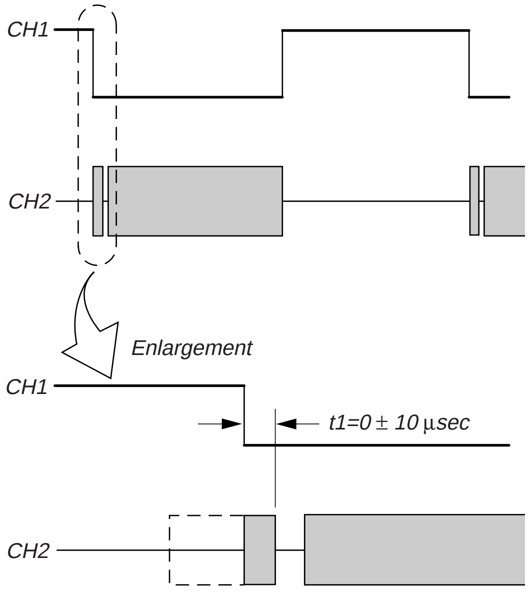


Fig. 5-3-7.

7. CAP FG Offset Adjustment (VC-213 board)

Improve the capstan servo characteristic. If it is not correct. jitters will increase.

Mode	Playback
Signal	Hi8/standard 8mm alignment tape : For checking operation (WR5-5NSP(NTSC)) (WR5-5CSP(PAL))
Measurement Point	Pin ⑮ of CN910 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	61
Specified value	Duty = 50 ± 1 %

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 2E, and set data: 02.
3) Set to the playback mode.
4) Select page: 6, address: 01, set data: 81, and press the PAUSE button of the adjustment remote commander. (to start up automatic CAP FG offset adjustment.)
5) Select page: 6, address: 02, and check that the data is “01”.
6) Check that Duty of CAP FG signal satisfies the specified value. If not, select page: 6, address: 01, set data: 00, and press the PAUSE button, and then, repeat steps 4) to 6).
7) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
8) Select page: 2, address: 2E, and set data: 00.
9) Select page: 0, address: 01, and set data: 00.

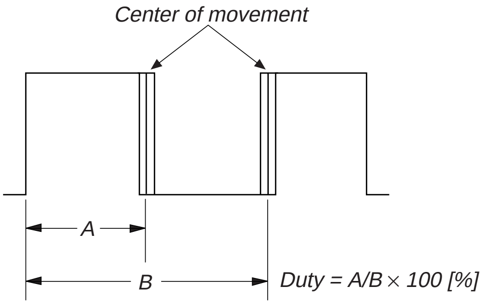


Fig. 5-3-8.

3-4. VIDEO SYSTEM ADJUSTMENTS

3-4-1. Video System Adjustments

Adjusting Procedure:

1. 27MHz/36MHz origin oscillation adjustment
2. Chroma BPF f_0 adjustment
3. S VIDEO OUT Y Level Adjustment
4. S VIDEO OUT chroma level adjustment
5. VIDEO OUT Y, chroma level check
6. Hi8/standard 8mm 14 MHz origin oscillation adjustment
7. BBI PLL adjustment
8. Hi8/standard 8mm Y level adjustment
9. Hi8/standard 8mm chroma level adjustment
10. Hi8/standard 8mm AFC f_0 adjustment
11. Hi8/standard 8mm RP Filter f_0 adjustment

1. 27MHz/36MHz Origin Oscillation Adjustment (VC-213 board)

Set the oscillation frequency of X501.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

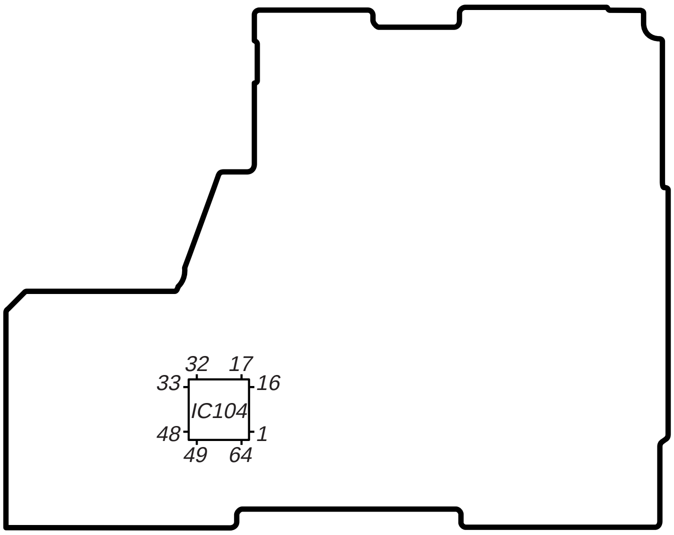
Note: 27MHz .... 720H model
36MHz .... 960H model
720H model: DCR-TRV410/TRV510
960H model: DCR-TRV410E/TRV510E

Mode	Camera
Measurement Point	Pin ㊶ of IC104
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	40
Specified Value	f=13500000 ± 68Hz

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 40, change the data and set the clock frequency(f) to the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

VC-213 BOARD



2. Chroma BPF f_0 Adjustment (VC-213 board)

Set the center frequency of IC643 chroma band-pass filter.

Mode	VTR stop
Signal	No signal
Measurement Point	CH1: Chroma signal terminal of S VIDEO jack (75Ω terminated) CH2: Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	2B
Specified Value	A = 100mVp-p or less B = 200mVp-p or more

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 11, set data: 10, and press the PAUSE button of the adjustment remote commander.
3) Check that the burst signal (B) is output to the chroma signal terminal of S VIDEO jack.
4) Select page: 3, address: 0C, set data: 04, and press the PAUSE button.
5) Select page: C, address: 2B, and change the data for minimum amplitude of the burst signal level (A).
(The data of address: 2B, should be “00” to “07”.)
6) Press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Check that the burst signal level (B) satisfies the specified value.
9) Select page: D, address: 11, set data: 00, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.

When the data of page: 3, address: 0C, is 04:

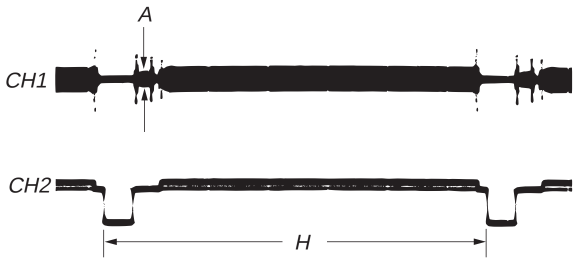


Fig. 5-3-9.

When the data of page: 3, address: 0C, is 00:

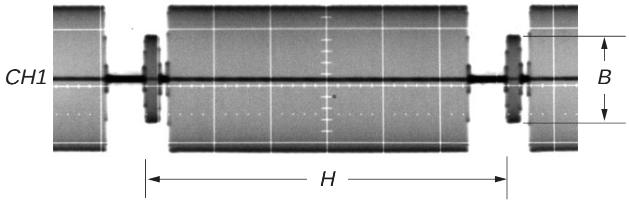


Fig. 5-3-10.

3. S VIDEO OUT Y Level Adjustment (VC-213 board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	A = 1000 ± 20mV

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 35. After note down the data of this address, set data: 01 to the address.
3) Select page: D, address: 11, set data: 10, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 0C, set data: 02, and press the PAUSE button.
5) Select page: C, address: 25, change the data and set the Y signal level (A) to the specified value.
6) Press the PAUSE button.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: D, address: 11, set data: 00, and press the PAUSE button.
9) Select page: 2, address: 35. and set the data that is noted down at step 2).
10) Select page: 0, address: 01, and set data: 00.

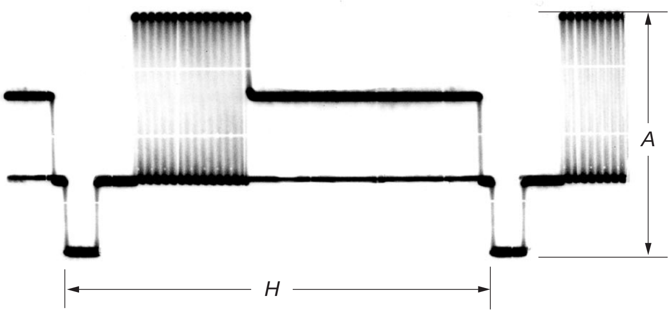


Fig. 5-3-11.

4. S VIDEO OUT Chroma Level Adjustment (VC-213 board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level: A = 714 ± 14mV(NTSC) A = 700 ± 14mV(PAL) Cb level: B = 714 ± 14mV(NTSC) B = 700 ± 14mV(PAL) Burst level: C = 286 ± 6mV(NTSC) C = 300 ± 6mV(PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 35. After note down the data of this address, set data: 01 to the address.
3) Select page: D, address: 11, set data: 10, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 0C, set data: 02, and press the PAUSE button.
5) Select page: C, address: 26, change the data and set the Cr signal level (A) to the specified value.
6) Press the PAUSE button.
7) Select page: C, address: 27, change the data and set the Cb signal level (B) to the specified value.
8) Press the PAUSE button.
9) Check that the burst signal level (C) is satisfied the specified value.
10) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
11) Select page: D, address: 11, set data: 00, and press the PAUSE button.
12) Select page: 2, address: 35. and set the data that is noted down at step 2).
13) Select page: 0, address: 01, and set data: 00.

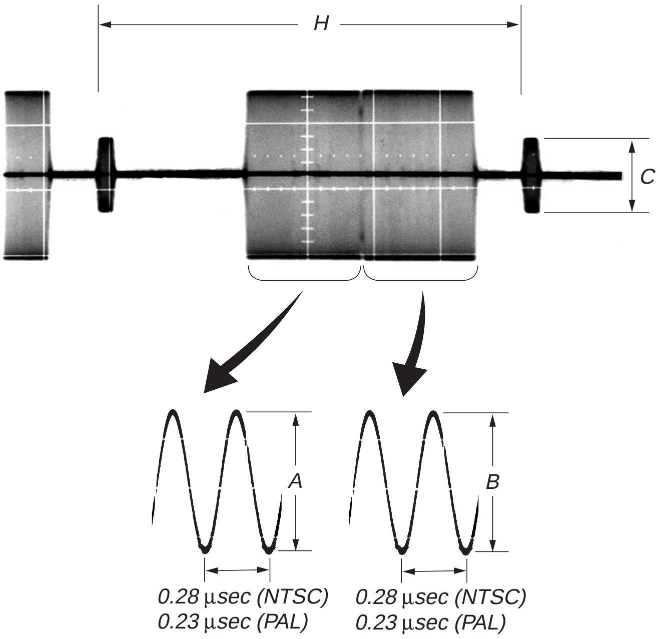


Fig. 5-3-12.

5. VIDEO OUT Y, Chroma Level Check (VC-213 board)

Mode	Camera
Subject	Arbitrary
Measurement Point	VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 286 ± 18mV(NTSC) A = 300 ± 18mV(PAL) Burst level: B = 286 ± 18mV(NTSC) B = 300 ± 18mV(PAL)

Adjusting method:

1) Select page: 0, address: 01, set data: 01.
2) Select page: 2, address: 35. After note down the data of this address, set data: 01 to the address.
3) Select page: D, address: 11, set data: 10, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 0C, set data: 02, and press the PAUSE button.
5) Check that the sync signal level (A) satisfies the specified value.
6) Check that the burst signal level (B) satisfies the specified value.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
8) Select page: D, address: 11, set data: 00, and press the PAUSE button.
9) Select page: 2, address: 35. and set the data that is noted down at step 2).
10) Select page: 0, address: 01, set data: 00.

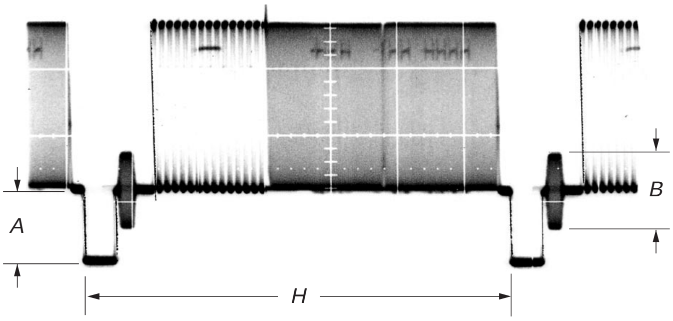


Fig. 5-3-13.

6. Hi8/standard 8mm 14 MHz Origin Oscillation Adjustment (VC-213 board)

Set the oscillation frequency of X251 for the Hi8/standard 8mm playback operation.

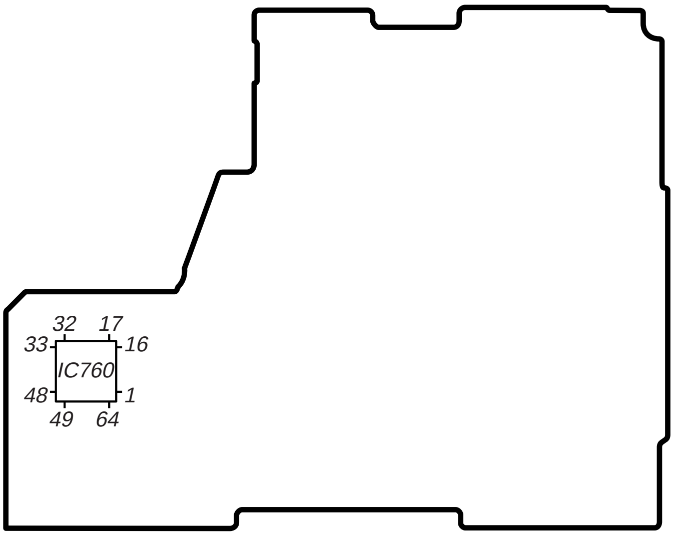
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ㉜ of IC760
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	41
Specified Value	f=3579545 ± 17Hz (NTSC) f=4433618 ± 22Hz (PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0D, set data: 06, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 63, set data: 02.
4) Select page: 6, address: 6A, set data: 01.
5) Select page: 6, address: 6B, set data: 04.
6) Select page: 6, address: 6F, set data: 01.
7) Select page: F, address: 41, change the data and set the clock frequency (f) to the specified value.
8) Press the PAUSE button.
9) Select page: 3, address: 0D, set data: 00, and press the PAUSE button of the adjustment remote commander.
10) Select page: 6, address: 63, set data: 00.
11) Select page: 6, address: 6A, set data: 00.
12) Select page: 6, address: 6B, set data: 00.
13) Select page: 6, address: 6F, set data: 00.
14) Select page: 0, address: 01, and set data: 00.

VC-213 BOARD



7. BBI PLL Adjustment (VC-213 board)

Set the VCO center level of the video input circuit (IC601).

Mode	VTR stop
Signal	No signal
Measurement Point	Display data of page: 3, address: 04
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	42
Specified Value	08 or 09 or 0A

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0D, set data: 04, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 63, set data: 02.
4) Select page: 6, address: 6A, set data: 01.
5) Select page: 6, address: 6B, set data: 04.
6) Select page: 6, address: 6F, set data: 01.
7) Select page: 3, address: 0C, set data: 80, and press the PAUSE button.
8) Select page: F, address: 42, and set data: 00, and press the PAUSE button.
9) Select page: 3, address: 04, and check. If the data is “08” or “09” or “0A”, proceed to step 12).
10) Select page: F, address: 42, add “10”(hexadecimal) to the data and press the PAUSE button.
    Note: If the data of page: F, address: 42 is “F0”, change the data to “FF”, and press the PAUSE button.
11) Select page: 3, address: 04, and check the data satisfies the specified value. If not repeat steps 10) to 11).
12) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
13) Select page: 3, address: 0D, set data: 00, and press the PAUSE button.
14) Select page: 6, address: 63, set data: 00.
15) Select page: 6, address: 6A, set data: 00.
16) Select page: 6, address: 6B, set data: 00.
17) Select page: 6, address: 6F, set data: 00.
18) Select page: 0, address: 01, and set data: 00.

8. Hi8/standard 8mm Y Level Adjustment (VC-213 board)

Set the Hi8/standard 8mm PB Y signal level. (Adjust the D/A converter out put level of IC251.)

Mode	VTR stop
Signal	No signal
Measurement Point	Y signal terminal of S VIDEO terminal (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	69
Specified Value	A=589 ± 5mV (NTSC) A=578 ± 5mV (PAL)

Note : Insert a plug into the S video terminal.

Adjusting method:

1) Close the cassette compartment without inserting a cassette.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: F, address: 2C, set data: 01, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 10, set data: 12, and press the PAUSE button.
5) Select page: 2, address: 10, set data: 02.
6) Select page: 2, address: 2E, set data: 02.
7) Set the playback mode without inserting a cassette.
8) Select page: 3, address: 0D, set data: 04, and press the PAUSE button.
9) Select page: 6, address: 63, set data: 02.
10) Select page: F, address: 69, change the data and set the level (A) between the pedestal and white to the specified value.
11) Press the PAUSE button.
12) Select page: F, address: 2C, set data: 00, and press the PAUSE button.
13) Select page: D, address: 10, set data: 00, and press the PAUSE button.
14) Select page: 2, address: 2E, set data: 00.
15) Select page: 3, address: 0D, set data: 00.
16) Select page: 6, address: 63, set data: 00.
17) Select page: 0, address: 01, and set data: 00.

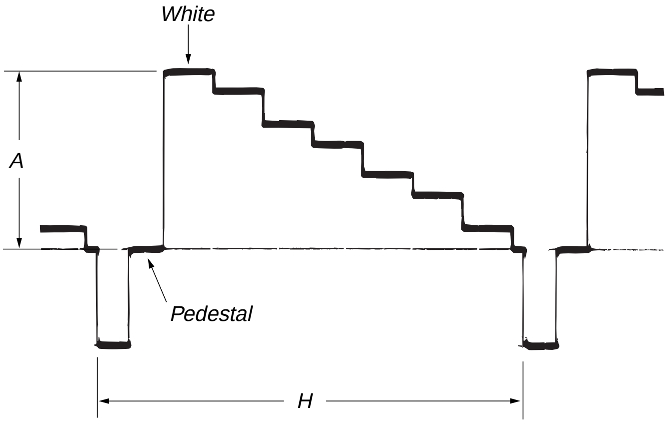


Fig. 5-3-14.

9. Hi8/standard 8mm Chroma Level Adjustment (VC-213 board)

Set the Hi8/standard 8mm PB Chroma signal level. (Adjust the D/A converter out put level of IC251.)

Mode	VTR stop
Signal	No signal
Measurement Point	Chroma signal terminal of S VIDEO terminal (75Ω terminated) External trigger : Y signal terminal of S VIDEO terminal
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	6B
Specified Value	A=286 ± 5mV (NTSC) A=300 ± 5mV (PAL)

Note : Insert a plug into the S video terminal.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 11, set data: 10, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 61, set data: 30.
4) Select page: 3, address: 0D, set data: 02, and press the PAUSE button.
5) Select page: 6, address: 6F, set data: 01.
6) Select page: F, address: 6B, change the data and set the burst level (A) to the specified value.
7) Press the PAUSE button.
8) Select page: D, address: 11, set data: 00, and press the PAUSE button.
9) Select page: 3, address: 0D, set data: 00, and press the PAUSE button.
10) Select page: 6, address: 61, set data: 00.
11) Select page: 6, address: 6F, set data: 00.
12) Select page: 0, address: 01, and set data: 00.

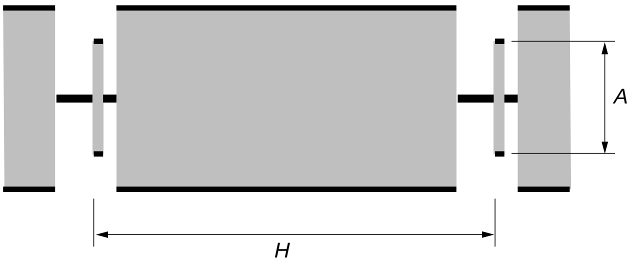


Fig. 5-3-15.

10. Hi8/standard 8mm AFC f_0 Adjustment (VC-213 board)

Adjust the pull-in range of the clock generator (IC251) for A/D conversion during Hi8/standard 8mm playback.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ② of CN910 (AFC f0)
Measuring Instrument	Digital voltmeter
Adjustment Page	F
Adjustment Address	6A
Specified Value	A=2.00 ± 0.05Vdc

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0D, set data: 04, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 63, set data: 04.
4) Select page: 6, address: 6F, set data: 01.
5) Select page: F, address: 6A, change the data and set the DC voltage (A) to the specified value.
6) Press the PAUSE button.
7) Select page: 3, address: 0D, set data: 00, and press the PAUSE button.
8) Select page: 6, address: 63, set data: 00.
9) Select page: 6, address: 6F, set data: 00.
10) Select page: 0, address: 01, and set data: 00.

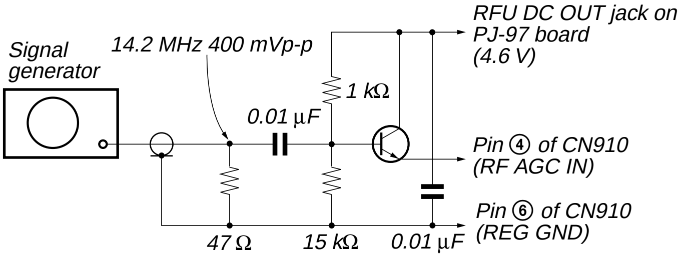
11. Hi8/standard 8mm RP Filter f_0 Adjustment (VC-213 board)

Adjust the LPF of the playback RF amplifier (IC201).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑦ of CN910 (RF AGC OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	6E
Specified Value	A= Minimum

Connection:

1) Input a 14.2MHz, 400mVp-p CW signal to Pin ④ of CN910 (RF AGC IN).



Signal generator
14.2 MHz 400 mVp-p
0.01 µF
1 kΩ
RFU DC OUT jack on PJ-97 board (4.6 V)
Pin ④ of CN910 (RF AGC IN)
Pin ⑥ of CN910 (REG GND)
47 Ω
15 kΩ
0.01 µF

Transistor : General NPN transistor (2SC403, etc)

47 Ω resistor :	*1-249-401-11*
1 kΩ resistor :	*1-249-417-11*
15 kΩ resistor :	*1-249-431-11*
0.01 µF capacitor :	*1-101-004-00*

Fig. 5-3-16.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 61, set data: 04.
3) Select page: 6, address: 6F, set data: 01.
4) Select page: F, address: 6E, change the data and minimize the 14.2MHz signal level (A).
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 6, address: 61, set data: 00.
7) Select page: 6, address: 6F, set data: 00.
8) Select page: 0, address: 01, and set data: 00.

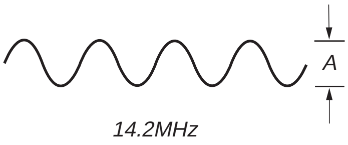


Fig. 5-3-17.

3-4-2. BIST Check

1. Playback System Check

1-1. Preparation for Playback

1) Set the POWER switch to VTR (or PLAYER) position.
2) Connect the adjusting remote commander and set the HOLD switch to ON (SERVICE) position.
3) Playback the BIST check tape. (WR5-6ND(NTSC), WR5-6CD(PAL))
   Note: Perform the following checks in the playback mode.

1-2. IC104(TRX) BIST(PB) Check

1) Select page: 3, address: 12, set data: 04, and press the PAUSE button.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
3) Select page: 3, address: 13, set data: 02, and press the PAUSE button.
4) When the playback system from IC104(TRX) to IC302(TFD) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data		
16	63	75	59
17	84	07	01

PAL model

Address	Data		
16	86	AA	90
17	35	33	B6

1-3. IC302(TFD) BIST(PB) Check

1) Select page: 3, address: 40, set data: 0F, and press the PAUSE button.
2) Select page: 3, address: 40, set data: 00, and press the PAUSE button.
3) When the playback system from IC302(TFD) to IC301(SFD) is normal, the display data (combination data) of page: 3, address: 41 and 42 agrees with any combination as shown below.

NTSC model

Address	Data
41	26
42	A1

PAL model

Address	Data
41	69
42	73

1-4. IC301(SFD) BIST(PB) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: AC, set data: 21, and press the PAUSE button.
3) Select page: C, address: AD, set data: 01 (NTSC) or data: 03 (PAL), and press the PAUSE button.
4) Select page: 3, address: 11, set data: 04, and press the PAUSE button.
5) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
6) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
8) When the playback system from IC301(SFD) to IC702 (ADC&DAC) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	41
15	81

PAL model

Address	Data
14	2D
15	7C

9) When the playback system from IC301(SFD) to IC303(LIP) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	E4
17	B5

PAL model

Address	Data
16	1C
17	A6

10) When the playback system from IC302(TFD) to IC301(SFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data
18	72
19	F8

PAL model

Address	Data
18	CC
19	A7

11) Select page: 3, address: 11, set data: 80, and press the PAUSE button.
12) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
13) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
14) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
15) When the playback system from IC302(TFD) to IC301(SFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data
18	E6
19	C3

PAL model

Address	Data
18	DB
19	C0

16) When the playback system from IC301(SFD) to IC351(VFD) is normal, the display data (combination data) of page: 3, address: 1A and 1B agrees with any combination as shown below.

NTSC model

Address	Data
1A	12
1B	43

PAL model

Address	Data
1A	90
1B	CE

17) Select page: C, address: AC, set data: 20, and press the PAUSE button.
18) Select page: C, address: AD, set data: 00 (NTSC) or data: 02 (PAL), and press the PAUSE button.
19) Select page: 0, address: 01, and set data: 00.

1-5. IC351(VFD) BIST(PB) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 51, set data: 0F, and press the PAUSE button.
3) Only for the DCR-TRV510/TRV510E model, select page: C, address: 60, set data: 00, and press the PAUSE button.

• VBUS/EX BIST(PB) Check

4) Select page: 3, address: 10, set data: 00, and press the PAUSE button.
5) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
6) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
7) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
8) When the playback system from IC301(SFD) to IC351(VFD) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	12
15	43

PAL model

Address	Data
14	90
15	CE

9) When the playback system from IC351(VFD) to IC251(DCR-TRV410/TRV410E) or IC606(DCR-TRV510/TRV510E) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
	TRV410	TRV510
16	FB	26
17	F4	FA

PAL model

Address	Data	
	TRV410E	TRV510E
16	54	2E
17	ED	6C

• UPY Y BIST(PB) Check

10) Select page: 3, address: 10, set data: 88, and press the PAUSE button.
11) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
12) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
13) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
14) When the playback system from IC351(VFD) to IC4501,5502 (LCD DRIVER) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
	TRV410	TRV510
16	9A	F8
17	13	DB

PAL model

Address	Data	
	TRV410E	TRV510E
16	03	51
17	C9	91

• UPY Cr BIST(PB) Check

15) Select page: 3, address: 10, set data: 89, and press the PAUSE button.
16) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
17) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
18) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
19) When the playback system from IC351(VFD) to IC4501,5502 (LCD DRIVER) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
	TRV410	TRV510
16	1C	4E
17	60	B9

PAL model

Address	Data	
	TRV410E	TRV510E
16	14	43
17	A7	B0

• UPY Cb BIST(PB) Check

20) Select page: 3, address: 10, set data: 8A, and press the PAUSE button.
21) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
22) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
23) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
24) When the playback system from IC351(VFD) to IC4501,5502 (LCD DRIVER) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
	TRV410	TRV510
16	92	29
17	5A	2E

PAL model

Address	Data	
	TRV410E	TRV510E
16	B8	43
17	67	B0

• ENC Ya BIST(PB) Check

25) Select page: 3, address: 10, set data: 8B, and press the PAUSE button.
26) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
27) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
28) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
29) When the playback system from IC351(VFD) to IC643 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
	TRV410	TRV510
16	3C	46
17	D2	5E

PAL model

Address	Data	
	TRV410E	TRV510E
16	69	F4
17	21	24

• ENC Yb BIST(PB) Check

30) Select page: 3, address: 10, set data: 8C, and press the PAUSE button.
31) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
32) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
33) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
34) When the playback system from IC351(VFD) to IC643 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
	TRV410	TRV510
16	83	C5
17	9E	1D

PAL model

Address	Data	
	TRV410E	TRV510E
16	CC	F4
17	ED	BF

• ENC Ca BIST(PB) Check

35) Select page: 3, address: 10, set data: 8D, and press the PAUSE button.
36) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
37) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
38) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
39) When the playback system from IC351(VFD) to IC643 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data			
	TRV410		TRV510	
16	FE	22	80	45
17	68	CA	06	BC

PAL model

Address	Data			
	TRV410E		TRV510E	
16	70	43	D1	6D
17	D5	E4	0B	93

• ENC Cb BIST(PB) Check

40) Select page: 3, address: 10, set data: 8E, and press the PAUSE button.
41) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
42) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
43) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
44) When the playback system from IC351(VFD) to IC643 (AOI) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data			
	TRV410		TRV510	
16	B2	DE	47	62
17	E7	EE	F7	0B

PAL model

Address	Data			
	TRV410E		TRV510E	
16	ED	9A	FD	47
17	CB	1E	6B	5A

45) Select page: C, address: 51, set data: 03, and press the PAUSE button.
46) Only for the DCR-TRV510/TRV510E model, select page: C, address: 60, set data: 08, and press the PAUSE button.
47) Select page: 0, address: 01, and set data: 00.

2. Recording System Check

2-1. Preparations for recording

1) Playback the BIST check tape.(WR5-6ND(NTSC), WR5-6CD(PAL))
2) Select page: 3, address: 10, set data: C0, and press the PAUSE button.
3) Select page: 3, address: 11, set data: 07, and press the PAUSE button.
4) Enter the stop mode.
5) While keep the HOLD switch of the adjusting remote commander at ON(SERVICE) position, eject the BIST check tape and insert a tape for recording in place of the tape.
6) Enter the camera recording mode.
   Note: Perform the following checks in the camera recording mode.

2-2. IC351(VFD) BIST(REC) Check

1) Select page: 3, address: 12, set data: 10, and press the PAUSE button.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
3) Select page: 3, address: 13, set data: 04, and press the PAUSE button.
4) When the recording system from IC351(VFD) to IC301(SFD) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	D5
15	0B

PAL model

Address	Data
14	34
15	8A

2-3. IC301(SFD) BIST(REC) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: AC, set data: 21, and press the PAUSE button.
3) Select page: C, address: AD, set data: 01 (NTSC) or data: 03 (PAL), and press the PAUSE button.
4) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
5) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
6) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
7) When the recording system from IC301(SFD) to IC303(LIP) is normal, the display data (combination data) of page: 3, address: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data			
16	00	BC	4C	F0
17	15	CE	CF	14

PAL model

Address	Data			
16	2D	A2	61	EE
17	F5	7B	2F	1A

8) When the recording system from IC301(SFD) to IC302(TFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data			
18	F7	4F	54	EC
19	F6	69	80	1F

PAL model

Address	Data			
18	6C	23	01	4E
19	C7	76	0E	BF

9) Select page: 3, address: 11, set data: 87, and press the PAUSE button.
10) Select page: 3, address: 12, set data: 08, and press the PAUSE button.
11) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
12) Select page: 3, address: 13, set data: 03, and press the PAUSE button.
13) When the recording system from IC301(SFD) to IC302(TFD) is normal, the display data (combination data) of page: 3, address: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data	
18	C2	49
19	DB	21

PAL model

Address	Data	
18	F3	80
19	CA	79

14) When the recording system from IC351(VFD) to IC301(SFD) is normal, the display data (combination data) of page: 3, address: 1A and 1B agrees with any combination as shown below.

NTSC model

Address	Data
1A	D5
1B	0B

PAL model

Address	Data
1A	34
1B	8A

15) Select page: C, address: AC, set data: 20, and press the PAUSE button.
16) Select page: C, address: AD, set data: 00 (NTSC) or data: 02 (PAL), and press the PAUSE button.
17) Select page: 0, address: 01, and set data: 00.

2-4. IC302(TFD) BIST(REC) Check

1) Select page: 3, address: 40, set data: 0F, and press the PAUSE button.
2) Select page: 3, address: 40, set data: 00, and press the PAUSE button.
3) When the recording system from IC301(SFD) to IC302(TFD) is normal, the display data (combination data) of page: 3, address: 41 and 42 agrees with any combination as shown below.

NTSC model

Address	Data			
41	C2	7A	61	D9
42	42	DD	34	AB

PAL model

Address	Data			
41	55	1A	38	77
42	B5	04	7C	CD

4) When the recording system from IC302(TFD) to IC104(TRX) is normal, the display data (combination data) of page: 3, address: 43 and 44 agrees with any combination as shown below.

NTSC model

Address	Data			
43	18	C8	E0	57
44	F0	FB	02	D6

PAL model

Address	Data			
43	F6	A2	48	81
44	2A	E3	49	3D

2-5. IC104(TRX) BIST(REC) Check

1) Select page: 3, address: 12, set data: 04, and press the PAUSE button.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button.
3) Select page: 3, address: 13, set data: 02, and press the PAUSE button.
4) When the recording system from IC302(TFD) to IC104(TRX) is normal, the display data (combination data) of page: 3, address: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data	
14	96	BC
15	D1	0E

PAL model

Address	Data	
14	27	B5
15	8D	61

3-5. IR TRANSMITTER ADJUSTMENTS

Adjust using a IR receiver jig (J-6082-383-A).

Switch setting:
LASER LINK .... ON (Red LED is lit)

1. IR Video Carrier Frequency Adjustment (VC-213 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑤ of CN003 of IR receiver jig (RF) (Or Pin ⑯ of IC644 of VC-213 board)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	68
Specified Value	f = 11.85 ± 0.05 MHz

Connection of Equipment
Connect the measuring device as shown in the following figure, and adjust.

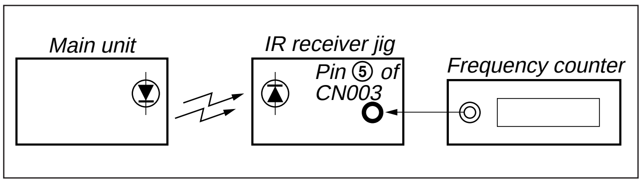


Fig. 5-3-18.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 08, and press the PAUSE button of the adjustment remote commander.
3) Select page: F, address: 68, change the data, and set the video carrier frequency (f) to the specified value.
4) Press the PAUSE button.
5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
6) Select page: 0, address: 01, and set data: 00.

2. IR Video Deviation Adjustment (VC-213 board)

Mode	VTR stop
Signal	No signal
Measurement Point	VIDEO OUT terminal of IR receiver jig (Terminated at 75Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	66
Specified Value	A = 0.82 ± 0.04 V

Connection of Equipment
Connect the measuring device as shown in the following figure, and adjust.

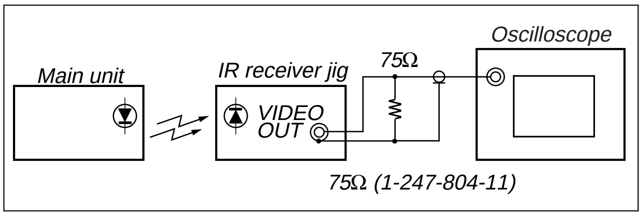


Fig. 5-3-19.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
3) Select page: F, address: 66, and change the data, set the video signal amplitude (A) to the specified value.
4) Press the PAUSE button.
5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
6) Select page: 0, address: 01, and set data: 00.

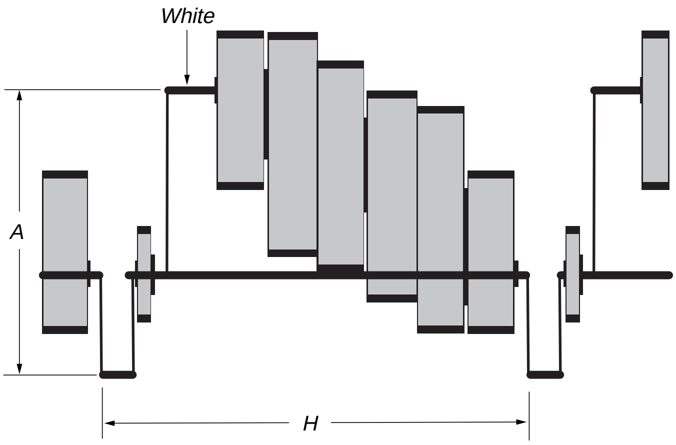


Fig. 5-3-20.

3. IR Audio Deviation Adjustment (VC-213 board)

Mode	VTR stop
Signal	Audio signal : 400Hz, –7.5dBs : L and R of AUDIO terminal Video signal : Color bar signal : VIDEO terminal
Measurement Point	AUDIO L terminal and AUDIO R terminal of IR receiver jig (Terminated at 47kΩ)
Measuring Instrument	Audio level meter
Adjustment Page	F
Adjustment Address	67
Specified Value	Signal level: –7.5 ± 1.0 dBs Level difference of L and R: Below 2dB

Connection of Equipment

Connect the measuring device as shown in the following figure, and adjust.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Connect the audio level meter to the AUDIO L terminal of the IR receiver jig.
3) Select page: F, address: 67, change the data and set the 400Hz audio signal level to the specified value.
4) Press the PAUSE button.
5) Connect the audio level meter to the AUDIO R terminal of the IR receiver jig.
6) Check that the 400Hz audio signal level is within the specified value. If outside, repeat from step 3).
7) Select page: 0, address: 01, and set data: 00.

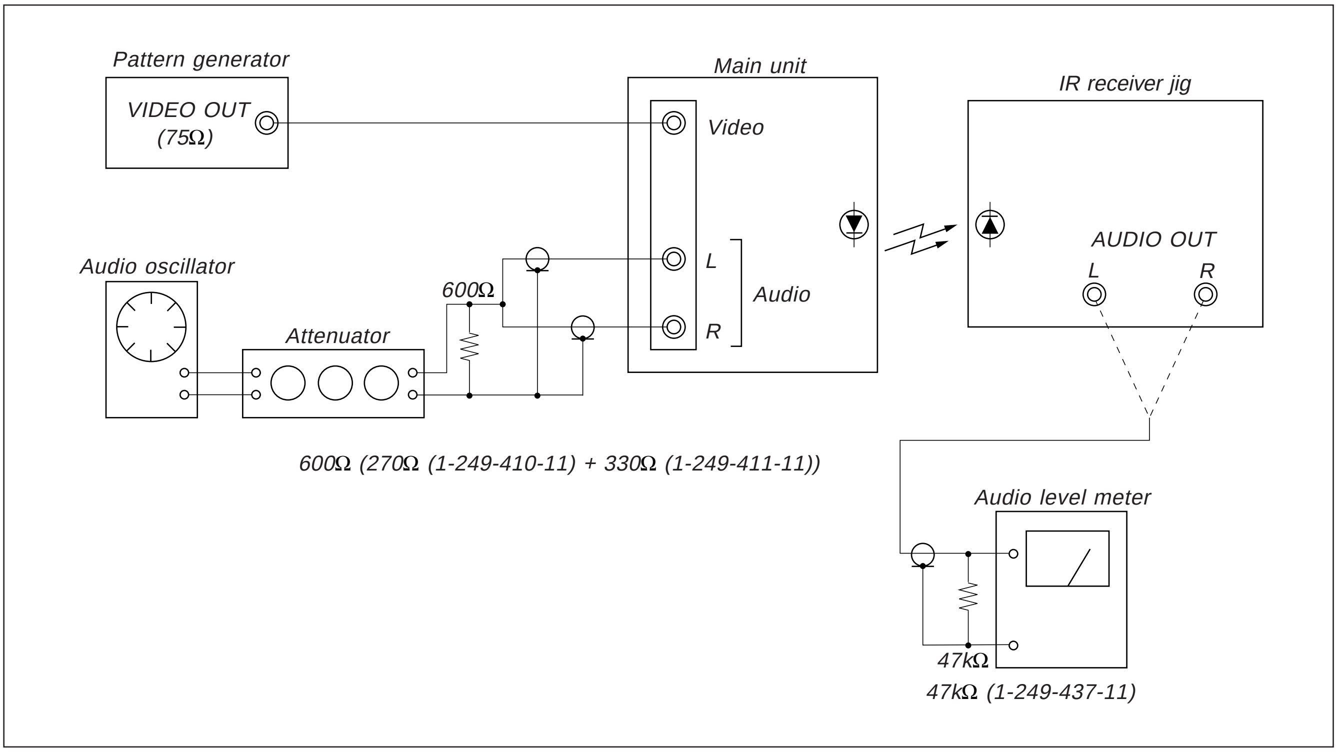

Pattern generator
VIDEO OUT
(75Ω)
Main unit
Video
L
R
Audio
IR receiver jig
AUDIO OUT
L
R
Audio oscillator
Attenuator
600Ω
600Ω (270Ω (1-249-410-11) + 330Ω (1-249-411-11))
Audio level meter
47kΩ
47kΩ (1-249-437-11)

Fig. 5-3-21.

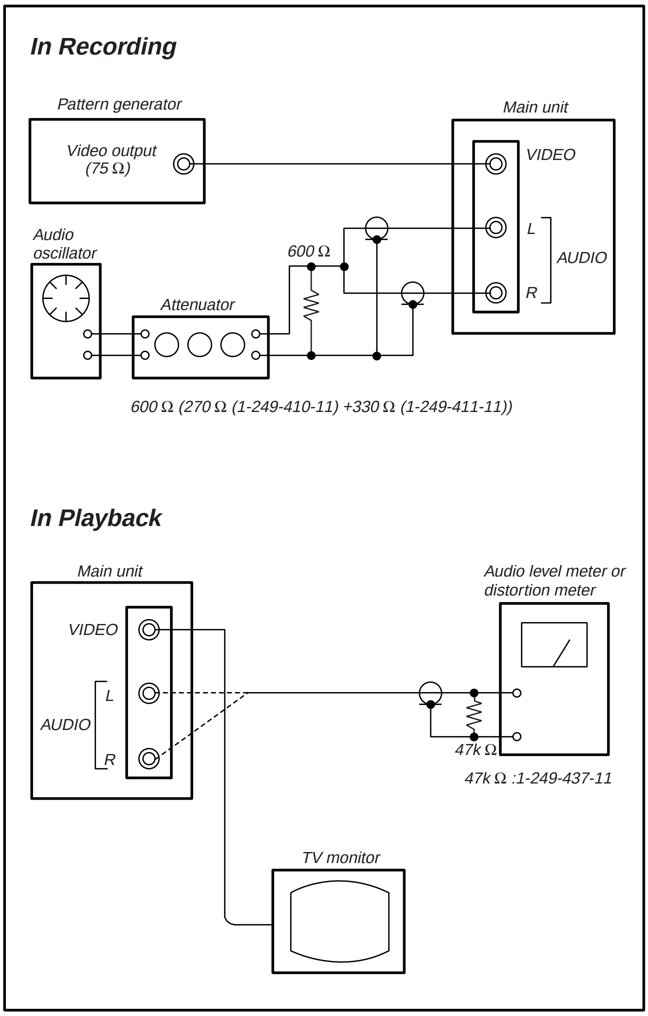
3-6. AUDIO SYSTEM ADJUSTMENTS

[Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 5-3-22.

[Adjustment Procedure]

1) Hi8/standard 8mm AFM BPF f_0 adjustment
2) Hi8/standard 8mm AFM 1.5MHz deviation adjustment
3) Hi8/standard 8mm AFM 1.7MHz deviation adjustment
4) Digital8 playback level check
5) Overall level characteristics check
6) Overall distortion check
7) Overall noise level check
8) Overall separation check



In Recording

In Playback

Pattern generator
Video output (75 Ω)
Main unit
VIDEO
L
AUDIO
R
Audio oscillator
600 Ω
Attenuator
600 Ω (270 Ω (1-249-410-11) +330 Ω (1-249-411-11))
Main unit
VIDEO
L
AUDIO
R
Audio level meter or distortion meter
47k Ω
47k Ω :1-249-437-11
TV monitor

Fig. 5-3-22.

1. Hi8/standard 8mm AFM BPF f_0 Adjustment (VC-213 board)

Sets the BPF passing frequency of IC760 so that the AFM signal can separate from the playback RF signal properly. If deviated. the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

Mode	Playback
Signal	Hi8/standard 8mm alignment tape: For BPF adjustment (WR5-11NS (NTSC)) (WR5-11CS (PAL))
Measurement Point	Audio output terminal left or right
Measuring Instrument	Distortion meter
Adjustment Page	F
Adjustment Address\	64
Specified Value	The Main and Sub channel distortion rate should be almost the same (within ± 1%) and minimum.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi sound switch (menu display) to “2”.
3) Select page: F, address: 64, change the data and minimize the distortion rate.
4) Press the PAUSE button of the adjustment remote commander.
5) Set the Hi-Fi sound switch (menu display) to “1”.
6) Select page: F, address: 64, change the data and minimize the distortion rate.
7) Press the PAUSE button of the adjustment remote commander.
8) Repeat steps 2) to 7) and set the data of address: 64 so that the distortions rates when the Hi-Fi sound switch is set to “2” and set to “1” respectively are almost the same and minimum.
9) Press the PAUSE button of the adjustment remote commander.
10) Select page: 0, address: 01, and set data: 00.
11) Set the Hi-Fi sound switch to “STEREO”.

2. Hi8/standard 8mm AFM 1.5 MHz Deviation Adjustment (VC-213 board)

Adjust to the optimum 1.5MHz audio FM signal deviation.
If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	Hi8/standard 8mm alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS(NTSC)) (WR5-9CS(PAL))
Measurement Point	Audio output terminal left or right
Measuring Instrument	Audio level meter
Adjustment Page	F
Adjustment Address	62
Specified Value	–7.5 ± 2.0dBs

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi sound switch (menu display) to “1”.
3) Select page: F, address: 62, change the data and set the 400Hz signal level to the specified value.
4) Press the PAUSE button.
5) Set the Hi-Fi sound switch (menu display) to “STEREO”.
6) Select page: 0, address: 01, and set data: 00.

3. Hi8/standard 8mm AFM 1.7 MHz Deviation Adjustment (VC-213 board)

Adjust to the optimum 1.7MHz audio FM signal deviation.
If improper, this causes deteriorated separation (with stereo signal).

Mode	Playback
Signal	Hi8/standard 8mm alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS(NTSC)) (WR5-9CS(PAL))
Measurement Point	Audio output terminal left or right
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	63
Specified Value	–7.5 ± 2.0dBs

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi sound switch (menu display) to “2”.
3) Select page: F, address: 63, change the data and set the 1kHz signal level to the specified value.
4) Press the PAUSE button.
5) Set the Hi-Fi sound switch (menu display) to “STEREO”.
6) Select page: 0, address: 01, and set data: 00.

4. Digital8 Playback Level Check

Mode	VTR playback
Signal	Digital8 alignment tape: For audio operation check (WR5-3ND (NTSC)) (WR5-3CD (PAL))
Measurement Point	Audio output terminal left or right
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF.

Checking Method:

1) Check that the playback signal level is the specified value.

5. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	400Hz, –66 dBs signal: MIC jack left and right
Measurement Point	Audio output terminal left or right
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0dBs

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the 400Hz signal level is the specified value.

6. Overall Distortion Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4% (200Hz to 6kHz BPF ON)

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the distortion is the specified value.

7. Overall Noise Level Check

Mode	Camera recording and playback
Signal	No signal: Insert a shorting plug in the MIC jack
Measurement Point	Audio output terminal left or right
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:

1) Insert a shorting plug in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the noise level is the specified value.

8. Overall Separation Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack <right> [left] (Connect the MIC jack <left> [right] to GND)
Measurement Point	Audio output terminal <left> [right]
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs

< > : Left channel check
[ ] : Right channel check

Checking Method:

1) Input the 400Hz, –66dBs signal in the <right> [left] terminal of the MIC jack only.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the signal level of the audio output <left> [right] terminal is the specified value.

5-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to “HOLD” (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-4-1.

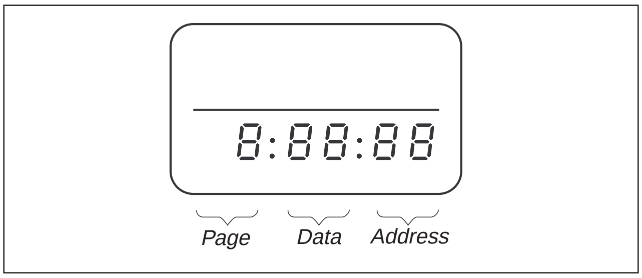


Fig. 5-4-1.

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (B, C, D, E, F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply (8.4 V) once.

2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-4-1.

4-3. SERVICE MODE

Additional note on adjustment

Note: After the completion of the all adjustments, cancel the service mode by either of the following ways.

1) After data on page: D and F is restored, unplug the main power supply and remove the coin lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
2) After data on page: D and F is restored, select page: 0, address: 01, and return the data to 00. And when data on page:2 and 3 are changed, return data to the original condition.

1. Setting the Test Mode

Page F	Address 2C

Data	Function
00	Normal
01	Test mode Various emergency prohibitions and releases Drum emergency, capstan emergency, loading motor emergency, reel emergency, tape top and end, DEW detection

Page D	Address 10

Data	Function
00	Normal
01	Forced camera power ON
02	Forced VTR power ON
03	Forced camera + VTR power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D and F, the data set will be recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (8.4Vdc).
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjustment remote commander. And select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

2-1. C Page Emergence Memory Address

Page C	Address 38 to 43

Address	Contents
38	EMG code when first error occurs
3A	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
3B	Lower: MSW code to be moved when first error occurs
3C	EMG code when second error occurs
3E	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
3F	Lower: MSW code to be moved when second error occurs
40	EMG code when last error occurs
42	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
43	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (38 to 43). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (38 to 3B). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (3C to 3F).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (40 to 43).

Note : After completing adjustments, be sure to initialize the data of addresses 38 to 43 to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 38, set data: 00, and press the PAUSE button.
3) Select address: 39 to 43 and set data “00” into them in the same way as address: 38.
4) Select page: 0, address: 01, and set data: 00.

2-2. F Page Emergence Memory Address

Note 1: Emergence of PB mode only.

Page F	Address 10 to 1B

Address	Contents
10	EMG code when first error occurs
12	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
13	Lower: MSW code to be moved when first error occurs
14	EMG code when second error occurs
16	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
17	Lower: MSW code to be moved when second error occurs
18	EMG code when last error occurs
1A	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
1B	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data "00" is written in the above addresses (10 to 1B). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (10 to 13). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (14 to 17).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (18 to 1B).

Note 2: After completing adjustments, be sure to initialize the data of addresses 10 to 1B to "00".

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 10, set data: 00, and press the PAUSE button.
3) Select address: 11 to 1B and set data "00" into them in the same way as in address: 10.
4) Select page: 0, address: 01, and set data: 00.

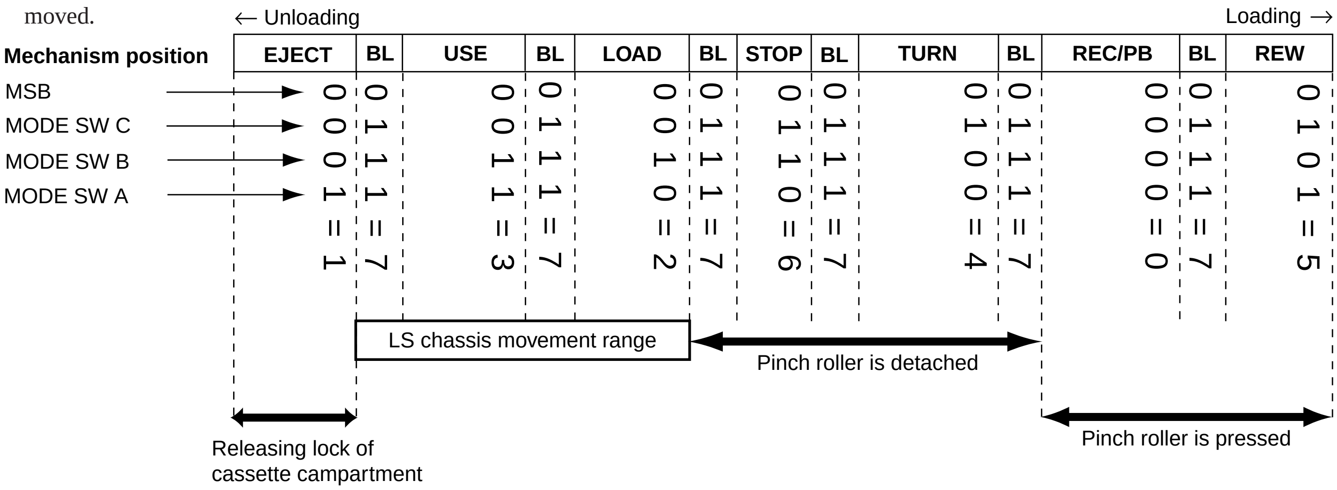
2-3. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in C page, addresses 38, 3C and 40 (or F page, addresses 10, 14 and 18). The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T reel emergency during normal rotation
23	S reel emergency during normal rotation
24	T reel emergency (Short circuit between S reel terminal and T reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

2-4. MSW Code

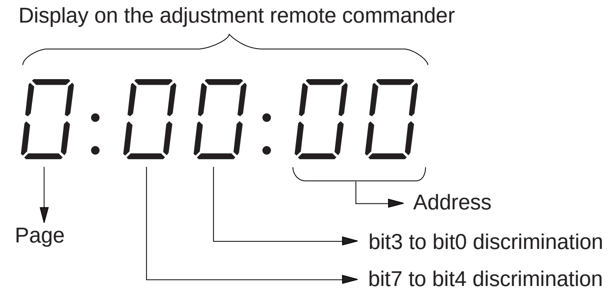
- The lower parts of the data of C page, addresses 3A, 3E and 42 (or F page, addresses 12, 16 and 1A) represent the MSW codes (mode switch mechanism position) when errors occurs.
- The upper parts of the data of C page, addresses 3A, 3E and 42 (or F page, addresses 12, 16 and 1A) represent, when the mechanism position is to be moved, the MSW codes at the start movement (when moving the loading motor).
- The lower parts of the data of C page, addresses 3B, 3F and 43 (or F page, addresses 13, 17 and 1B) represent the MSW codes of the desired movement when the mechanism position is to be moved.


← Unloading
Loading →
Mechanism position
EJECT
BL
USE
BL
LOAD
BL
STOP
BL
TURN
BL
REC/PB
BL
REW
MSB
MODE SW C
MODE SW B
MODE SW A
0 0 0 1 = 1
0 1 1 1 = 7
0 0 1 1 = 3
0 1 1 1 = 7
0 0 1 0 = 2
0 1 1 1 = 7
0 1 1 0 = 6
0 1 1 1 = 7
0 1 0 0 = 4
0 1 1 1 = 7
0 0 0 0 = 0
0 1 1 1 = 7
0 1 0 1 = 5
LS chassis movement range
Pinch roller is detached
Releasing lock of cassette campartment
Pinch roller is pressed

Mechanism Position	MSW Code	Contents
EJECT	1	Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction.
BL	7	BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating.
USE	3	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position.
LOAD	2	Code during loading/unloading. Code that is used while the LS chassis is moving.
STOP	6	Normal stop position. The pinch roller separates, the tension regulator returns, and the brakes of both reels turn on.
TURN	4	Position at which is used when the pendulum gear swings from S to T or from T to S.
REC/PB	0	PB, REC, CUE, REV, PAUSE, FF positions. The pinch roller is pressed and tension regulator is on.
REW	5	REW position. REW are carried at this position. The mechanism will not move any further in the loading direction.

3. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for the following items. Us the table below to discriminate if the bit value is “1” or “0”.


Display on the adjustment remote commander
0:00:00
Address
Page
bit3 to bit0 discrimination
bit7 to bit4 discrimination

(Example) If the remote commander display is “8E”, bit value from bit 7 to bit 4 can be discriminated from the column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (C)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

4. Input/output check

Page 2	Address 49

Bit	Function	When bit value = 1	When bit value = 0
0			
1			
2			
3			
4	MIC jack	MIC jack is used	
5	AUDIO(R) jack	VIDEO(R) jack is used	
6	VIDEO jack	VIDEO jack is used	
7	S VIDEO jack		S VIDEO jack is used

Using method:

1) Select page: 2, address: 49.
2) By discriminating the bit value of display data, the state of the jack can be discriminated.

5. LED, LCD (display window) check

Page 2	Address 05	Bit5

Using method:

1) Select page: 2, address: 05, and set the bit value of Bit5 to “1”.
2) Check that all LED are lit and all segments of LCD (display window) are lit.
3) Select page: 2, address: 05, and set the bit value of Bit5 to “0”.

6. Record of Use check

Page 2	Address A2 to AA

Bit	Function		Remarks
A2	Drum rotation counted time (BCD code)	Minute	
A3		Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4		Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
A5	User initial power on date (BCD code)	Year	After setting the clock, set the date of power on next
A6		Month	
A7		Day	
A8	Final condensation occurrence date (BCD code)	Year	
A9		Month	
AA		Day	

Using method:

1) The record of use data is displayed at page: 2, addresses: A2 to AA.

Note: This data will be erased when the coin lithium battery (CF-64 board BH001) is removed (reset).

7. Switch check (1)

Page 2	Address 43

Bit	Function	When bit value = 1	When bit value = 0
0	VTR MODE SW (PS-9500 block)	OFF	ON
1	CAM MODE SW (PS-9500 block)	OFF	ON
2	START/STOP SW (SS-8500 block S002)	OFF	ON
3	EJECT SW (SS-8500 block S003)	OFF	ON
4	CC DOWN SW (Mechanism chassis)	OFF (UP)	ON (DOWN)
5	PHOTO FREEZE SW (FP-49 flexible)	OFF	ON
6			
7			

Using method:

1) Select page: 2, address: 43.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

8. Switch check (2)

Page 2	Address 60 to 67

Using method:

1) Select page: 2, address: 60 to 67.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data							
	00 to 0C	0D to 24	25 to 3F	40 to 5D	5E to 81	82 to AA	AB to D7	D8 to FF
60 (KEY AD0) (IC801 (93))	LASER LINK (FK-8500 block) (S008)	STOP (FK-8500 block) (S001)	FF (FK-8500 block) (S003)	REC (FK-8500 block) (S005, 007)	EDIT SEARCH(+) (FK-8500 block) (S009)	EDIT SEARCH(–) (FK-8500 block) (S010)		No key input
61 (KEY AD1) (IC801 (94))	PHOTO REC (FP-49 flexible)	PAUSE (FK-8500 block) (S002)	REW (FK-8500 block) (S004)	PLAY (FK-8500 block) (S006)				No key input
62 (KEY AD2) (IC801 (95))	DIGITAL EFFECT (CF-64 board) (S001)	PICTURE EFFECT (CF-64 board) (S006)	MENU (CF-64 board) (S010)	EXECUTE (CF-64 board) (S015)		5sec REC (CF-64 board) (S024)	PUSHING REC (CF-64 board) (S024)	NORMAL REC (CF-64 board) (S024)
64 (KEY AD4) (IC801 (97))			EXPOSURE (CF-64 board) (S012)	BACK LIGHT (CF-64 board) (S017)	FADER (CF-64 board) (S027)	FOCUS INFINITY (PS-9500 block)	FOCUS AUTO (PS-9500 block)	FOCUS MANUAL (PS-9500 block)
65 (KEY AD5) (IC801 (98))	DATA CODE (CF-64 board) (S003)		END SEARCH (CF-64 board) (S013)	SELF TIMER (CF-64 board) (S018)	DISPLAY (CF-64 board) (S022)		+SLOW SHUTTER (FP-62 flexible)	No key input
66 (KEY AD6) (IC801 (99))	PROGRAM AE (CF-64 board) (S004)	BRIGHT(+) (FP-93 flexible)	BRIGHT(–) (FP-93 flexible)	VOLUME(+) (FP-93 flexible)	VOLUME(–) (FP-93 flexible)	PANEL REVERSE (FP-642 flexible)	PANEL CLOSE (FP-642 flexible)	PANEL NORMAL (FP-642 flexible)
67 (KEY AD7) (IC801 (100))	MEMORY(+) (CF-64 board) (S002)*1	MEMORY(–) (CF-64 board) (S005)*1	MEMORY INDEX (CF-64 board) (S007)*1	MEMORY DELETE (CF-64 board) (S009)*1	MEMORY PLAY (CF-64 board) (S001)*1			No key input

*1 : DCR-TRV510/TRV510E only.

9. AUDIO(L) jack check

Page 2	Address 42

Bit	Function	When bit value = 1	When bit value = 0
2	AUDIO(L) jack	AUDIO(L) jack is used	

Using method:

1) Select page: 2, address: 45.
2) By discriminating the bit value of display data, the state of the AUDIO(L) jack can be discriminated.

10. Headphone jack check

Page 3	Address 56

Bit	Function	When bit value = 1	When bit value = 0
2	Headphone jack	Headphone jack is used	

Using method:

1) Select page: 3, address: 56.
2) By discriminating the bit value of display data, the state of the headphone jack can be discriminated.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

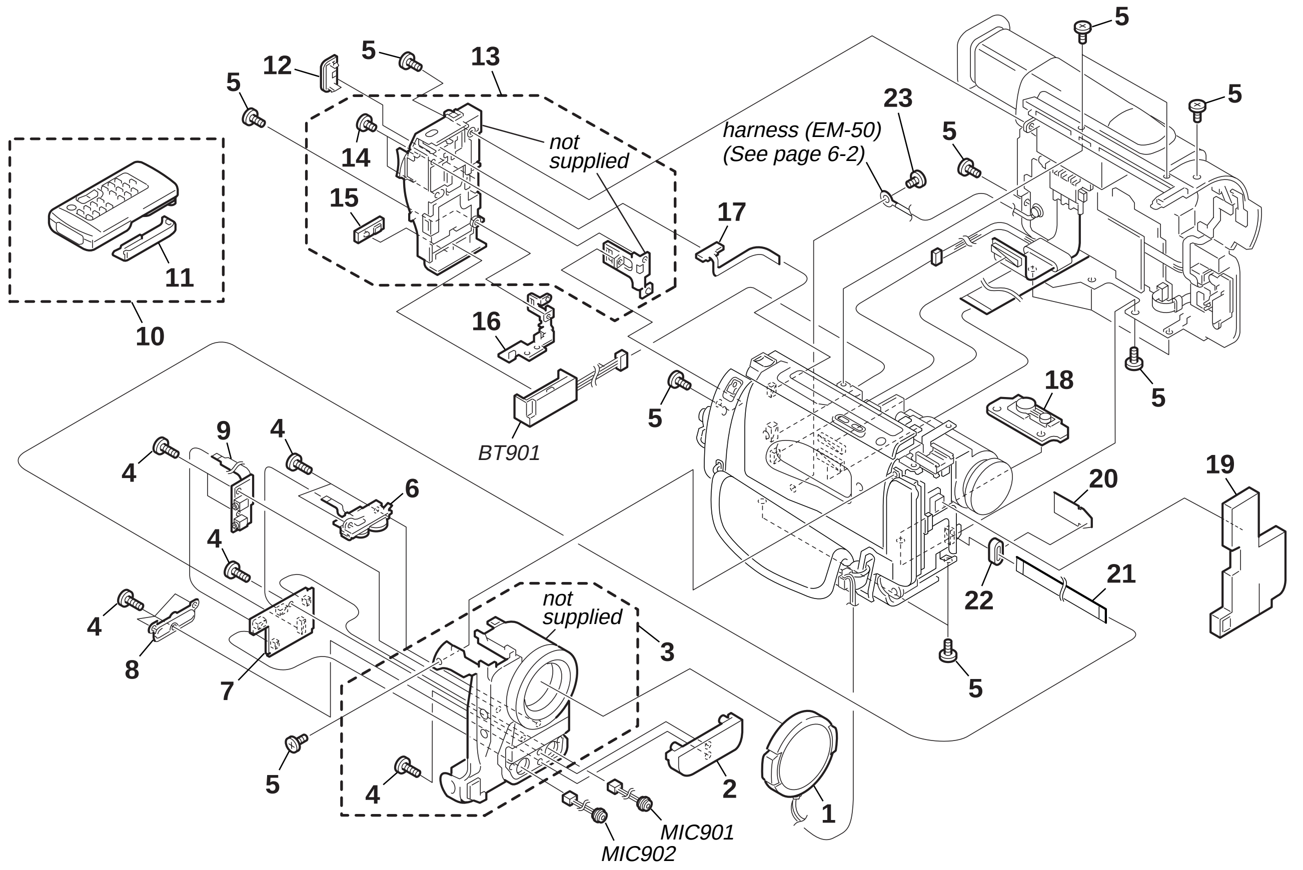
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  - CND : Canadian model
  - HK : Hong Kong model
  - AUS : Australian model
  - CN : Chinese model
  - JE : Tourist model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

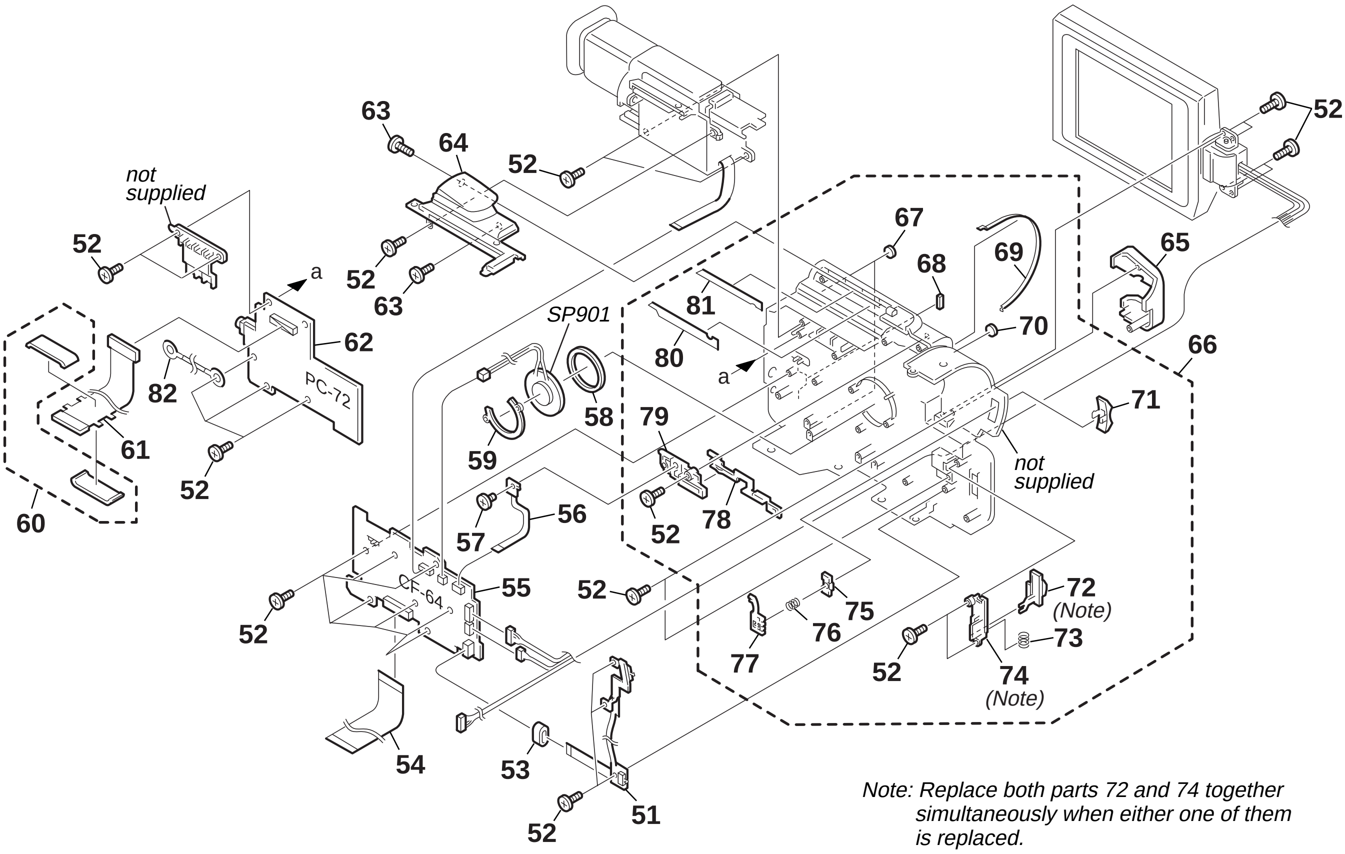
410 : TRV410
410E : TRV410E
510 : TRV510
510E : TRV510E

6-1-1. FRONT PANEL (N4) AND BATTERY PANEL (P) BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remarks
1	X-3949-376-1	CAP (N) ASSY, LENS	
2	X-3949-408-1	GRILLE (N4) ASSY, MICROPHONE	
3	X-3949-405-1	PANEL (N4) ASSY, FRONT (410/410E:E,HK,AUS,CN,JE/510)	
3	X-3949-406-1	PANEL (N4) ASSY, FRONT (410E:AEP,UK/510E)	
4	3-948-339-61	TAPPING	
5	3-968-729-01	SCREW (M2), LOCK ACE, P2	
6	1-418-273-11	SWITCH BLOCK, CONTROL (MF-9500)	
7	A-7073-947-A	MA-356 (I) BOARD, COMPLETE	
8	X-3949-407-1	COVER (N4) ASSY, MN	
9	1-673-118-21	FP-76 FLEXIBLE BOARD	
10	1-418-422-11	REMOTE COMMANDER (RMT-814)(410E:E1)	
10	1-475-141-61	REMOTE COMMANDER (RMT-814) (410/410E:AEP,UK,E,HK,AUS,CN,JE/510/510E)	
11	3-742-854-01	LID,BATTERY CASE (for RMT-814)	
12	3-975-752-01	LID (BT), CPC	
13	X-3949-390-1	PANEL ASSY (P), BATTERY	
14	3-968-729-61	SCREW (M2X3), LOCK ACE, P2	
15	3-987-656-01	LID, JACK	
16	3-053-723-01	SHEET METAL (LOWER), STRAP	
17	1-672-663-21	FP-49 FLEXIBLE BOARD	
18	3-987-717-01	SCREW	
19	3-054-022-01	CUSHION (N4)	
* 20	3-055-380-01	SHEET, FERRITE FIXED	
21	1-673-119-11	FP-77 FLEXIBLE BOARD	
22	1-469-431-11	BEAD, FERRITE	
23	3-713-786-21	SCREW (M2X3)	
BT901	1-694-384-11	TERMINAL BOARD, BATTERY	
MIC901	1-542-312-11	MICROPHONE (L)	
MIC902	1-542-312-11	MICROPHONE (R)	

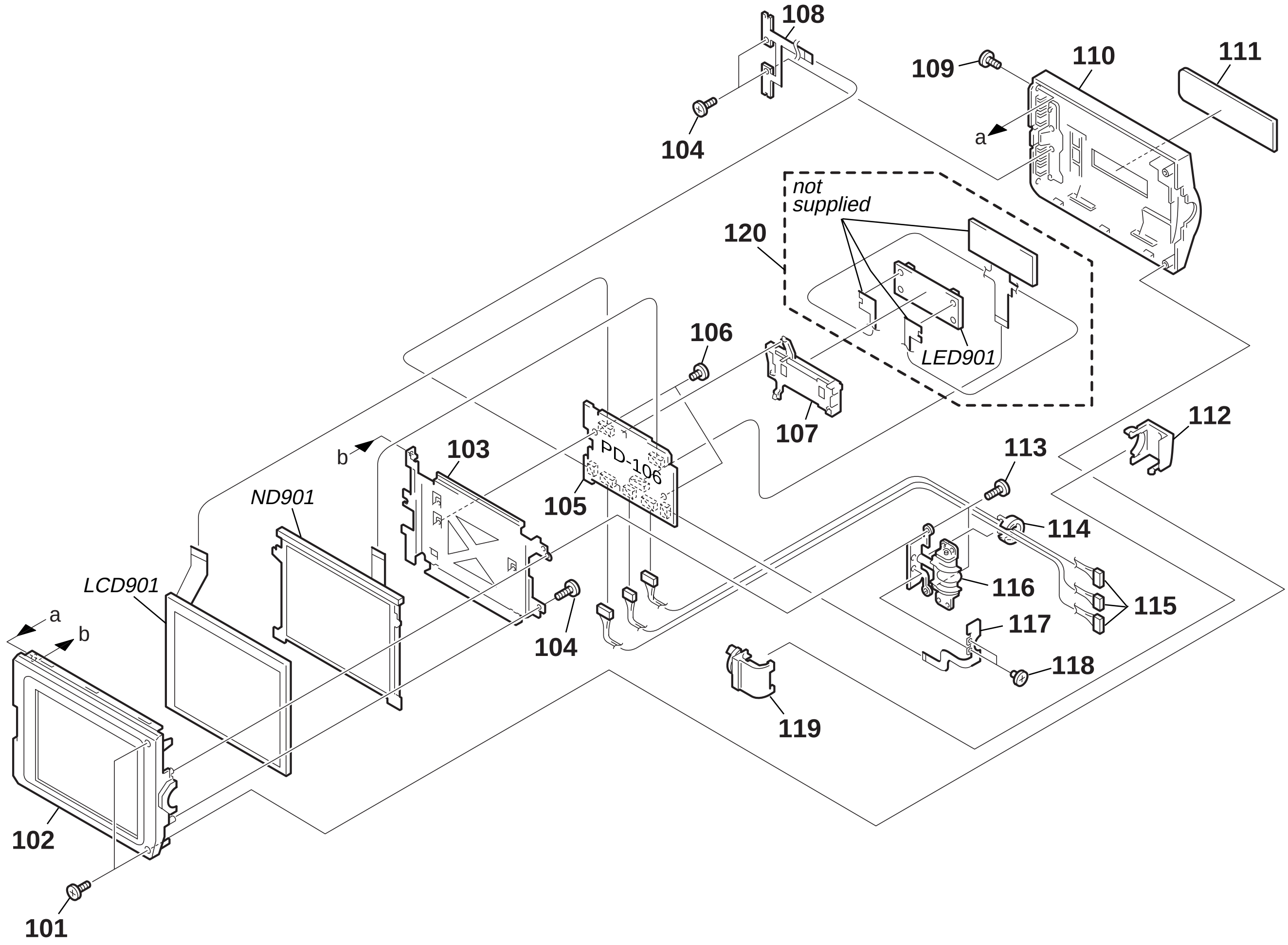
6-1-2. CABINET (R) BLOCK ASSEMBLY


63
64
52
not supplied
52
a
52
63
62
PC-72
82
61
60
52
SP901
58
59
57
56
55
CF-64
52
52
54
53
52
51
67
68
69
81
80
a
79
78
52
70
65
66
71
not supplied
72 (Note)
75
76
77
52
73
74 (Note)
52

Note: Replace both parts 72 and 74 together simultaneously when either one of them is replaced.

Ref. No.	Part No.	Description	Remarks
51	1-418-274-11	SWITCH BLOCK, CONTROL (PS-9500)	
52	3-948-339-61	TAPPING	
53	1-469-431-11	BEAD, FERRITE (410E/510E)	
54	1-783-240-11	CABLE, FLEXIBLE FLAT (FFC-236)	
55	A-7073-949-A	CF-64 (C) BOARD, COMPLETE	
56	1-672-668-21	FP-62 FLEXIBLE BOARD	
57	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	
58	3-965-367-01	SPACER, SP	
* 59	3-053-783-01	RETAINER (93), SPEAKER	
60	1-469-444-11	FILTER, EMI (510/510E)	
61	1-673-160-21	FP-79 FLEXIBLE BOARD (510/510E)	
62	A-7073-946-A	PC-72 BOARD, COMPLETE (510/510E)	
63	3-948-339-01	SCREW, TAPPING	
64	3-054-476-01	CABINET (UPPER)	
65	3-054-483-01	COVER (R) (96), HINGE	
66	X-3949-494-1	CABINET (R) (960) ASSY (510)	
66	X-3949-495-1	CABINET (R) (960) ASSY (510E)	
66	X-3949-496-1	CABINET (R) (960) ASSY (410E:AEP,UK)	
66	X-3949-497-1	CABINET (R) (960) ASSY (410/410E:E,HK,AUS,CN,JE)	
67	3-959-978-02	CUSHION, PANEL	
* 68	3-054-485-01	CUSHION, PANEL LOCK	
* 69	3-054-609-01	RING (96), ORNAMENTAL	
70	3-054-568-01	CUSHION, PANEL	
71	3-054-028-01	KNOB (952), POWER	
72	3-056-469-01	KNOB (93), MF	
73	3-965-034-01	SPRING, COMPRESSION	
74	3-056-470-01	RETAINER (93), MF	
75	3-054-029-01	BUTTON (952), POWER LOCK	
76	3-568-315-01	SPRING, COMPRESSION	
77	3-054-030-01	HOLDER (952), P KNOB	
78	3-054-474-01	KNOB (96), NS	
79	3-054-268-01	RETAINER (955), NS	
* 80	3-055-123-01	SHEET (96), CVF BLIND	
* 81	3-055-684-01	SHEET (2), CVF BLIND	
82	1-959-833-11	HARNESS (EM-50) (510/510E)	
SP901	1-504-753-41	SPEAKER (2.8CM)	

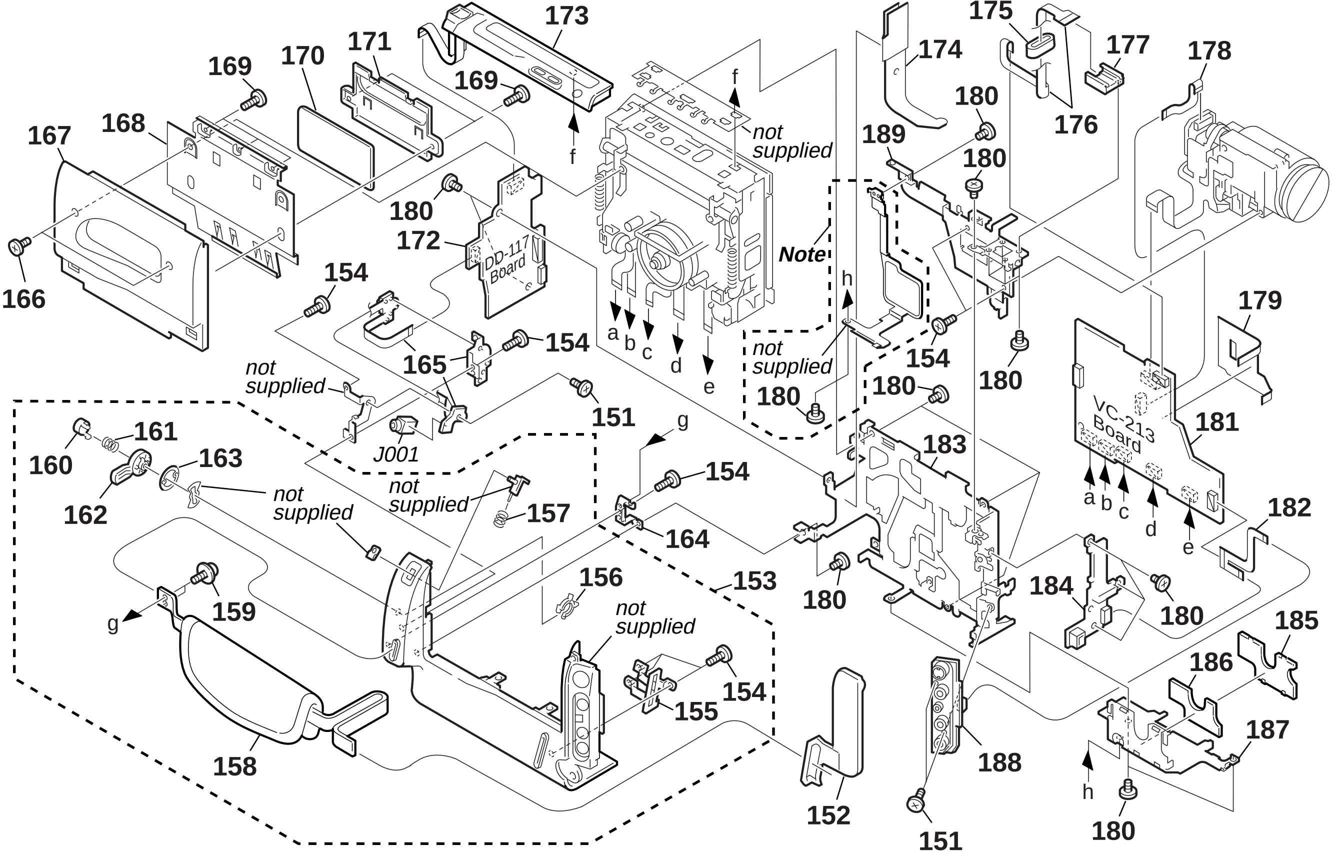
6-1-3. LCD BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remarks
101	3-948-339-01	SCREW, TAPPING	
102	3-054-480-01	CABINET (M) (96), P	
103	X-3949-499-1	FRAME (96) ASSY, PANEL	
104	3-948-339-61	TAPPING	
105	A-7073-948-A	PD-106 (CA) BOARD, COMPLETE	
106	3-713-786-21	SCREW (M2X3)	
107	3-054-275-01	HOLDER (94), LCD	
108	1-673-161-21	FP-93 FLEXIBLE BOARD	
109	3-968-729-01	SCREW (M2), LOCK ACE, P2	
110	X-3949-498-1	CABINET (C) (960) ASSY, P	
111	3-054-482-01	WINDOW (96), LCD (510)	
111	3-054-482-11	WINDOW (96), LCD (510E)	
111	3-054-482-21	WINDOW (96), LCD (410E)	
111	3-054-482-31	WINDOW (96), LCD (410)	
112	3-054-484-01	COVER (C) (96), HINGE	
113	3-948-339-11	SCREW, TAPPING	
114	3-987-623-01	CLAMP, HARNESS	
115	1-959-311-11	HARNESS (DP-75)	
116	X-3949-657-1	HINGE ASSY (NH)	
117	1-668-963-21	FP-642 FLEXIBLE BOARD	
118	4-981-286-01	SCREW (M1.7X2) (IB LOCK)	
119	3-987-625-01	COVER (M), HINGE	
120	A-7094-411-A	INDICATION (LCD) BLOCK ASSY	
LCD901	1-803-034-21	INDICATOR MODULE, LIQUID CRYSTAL	
⚠LED901	1-517-866-11	LIGHT, BACK	
⚠ND901	1-517-852-11	TUBE, FLUORESCENT,COLD CATHODE	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-4. CABINET (L) BLOCK AND MAIN BOARDS ASSEMBLY


Note: AEP, UK model only

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not supplied
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189
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167
168
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DD-117 Board
Note
166
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179
not supplied
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165
154
a
b
c
d
e
not supplied
180
180
180
181
VC-213 Board
151
g
160
161
163
J001
183
not supplied
not supplied
a
b
c
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not supplied
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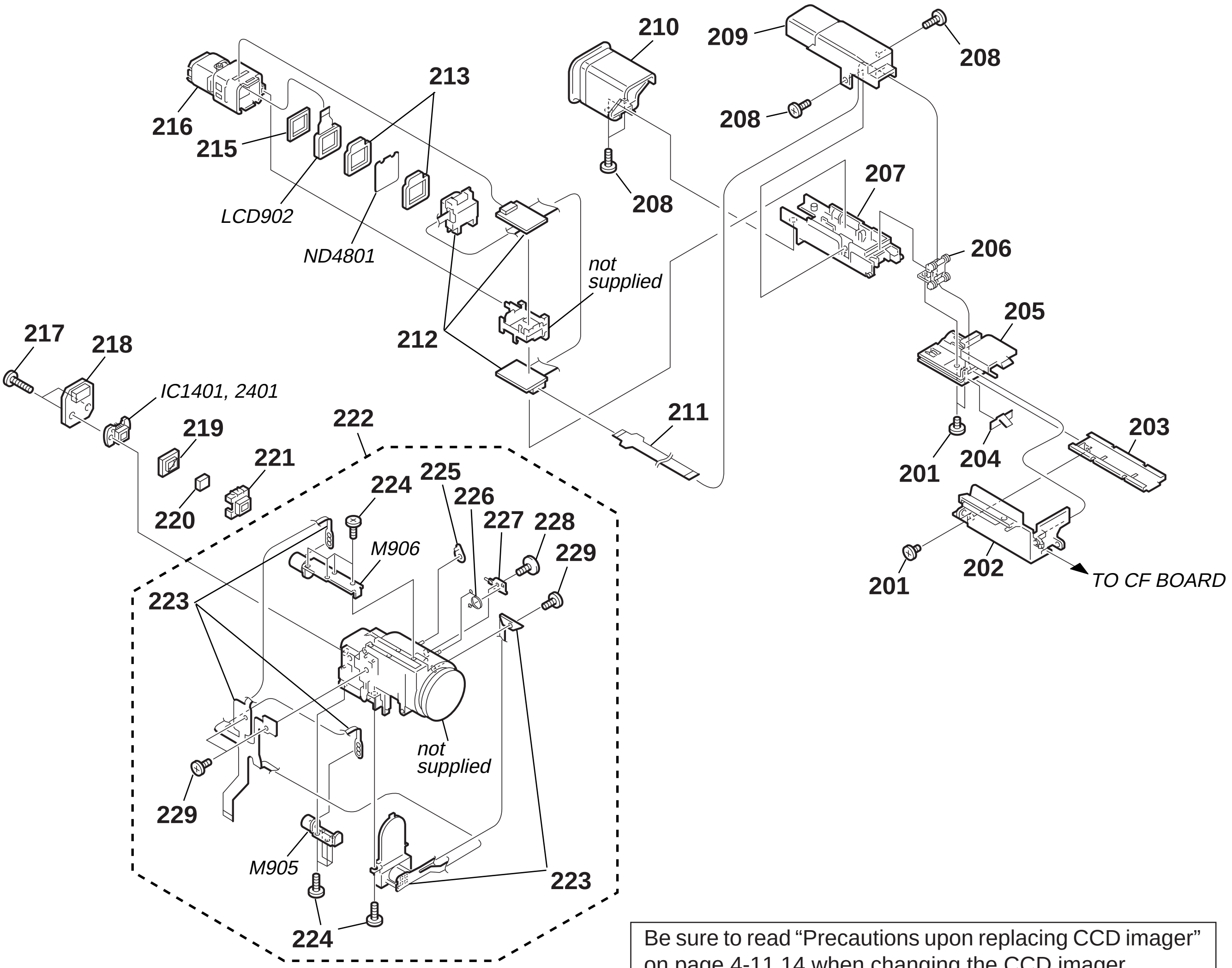
Ref. No.	Part No.	Description	Remarks
151	3-968-729-01	SCREW (M2), LOCK ACE, P2	
* 152	3-975-522-11	COVER, JACK	
153	X-3949-395-1	CABINET (L) ASSY (510)	
153	X-3949-396-1	CABINET (L) ASSY (510E)	
153	X-3949-397-1	CABINET (L) ASSY (410)	
153	X-3949-398-1	CABINET (L) ASSY (410E)	
154	3-948-339-61	TAPPING	
155	3-054-011-01	SHEET METAL (3), SS (510/510E)	
155	3-975-966-01	SHEET METAL (2), SS (410/410E)	
156	3-949-192-01	HOLDER, STAND-BY KNOB	
157	3-302-492-00	SPRING, COMPRESSION	
158	3-052-815-01	BELT (ES), GRIP	
159	3-679-362-11	SCREW	
160	3-054-010-01	BUTTON, S/S (510/510E)	
160	3-960-566-01	BUTTON, S/S (410/410E)	
161	3-979-642-01	SPRING, COMPRESSION	
162	3-969-081-01	KNOB, STAND-BY	
163	3-970-854-01	SPRING, STAND-BY	
* 164	3-975-532-01	HOLDER, EL	
165	1-475-619-11	SWITCH BLOCK, CONTROL (SS-8500)	
166	3-968-729-81	SCREW (M2), LOCK ACE, P2	
167	X-3949-392-1	LID ASSY, CASSETTE (510)	
167	X-3949-393-1	LID ASSY, CASSETTE (410/410E/510E)	
168	3-987-678-11	PLATE, CASSETE SHIELD (410E:AEP,UK/510E)	
169	3-713-791-01	SCREW (M1.7X4), TAPPING, P2 (410E:AEP,UK/510E)	
170	1-469-364-11	FILTER, EMI (CS) (410E:AEP,UK/510E)	
171	3-987-677-01	COVER (C), FERRITE (410E:AEP,UK/510E)	
172	A-7073-922-A	DD-117 (VC) BOARD, COMPLETE (410/410E)	
172	A-7073-943-A	DD-117 (VCD) BOARD, COMPLETE (510/510E)	
173	1-475-617-51	SWITCH BLOCK, CONTROL(FK-8500) (410E:AEP,UK/510E)	
173	1-475-617-71	SWITCH BLOCK, CONTROL(FK-8500) (410/410E:E,HK,AUS,CN,JE/510)	
* 174	3-053-745-01	PROTECTOR, LS FLEXIBLE	
175	1-469-431-11	BEAD, FERRITE	
176	1-672-672-21	FP-45 FLEXIBLE BOARD	
177	1-774-867-31	CONNECTOR,EXTERNAL (HOT SHOE) 8P	
178	1-672-665-11	FP-54 FLEXIBLE BOARD	
* 179	3-055-691-01	PROTECTOR, L- FLEXIBLE	
180	3-713-786-21	SCREW (M2X3)	
181	A-7094-282-A	VC-213 (VN) BOARD, COMPLETE (410)	
181	A-7094-283-A	VC-213 (VQP) BOARD, COMPLETE (410E)	
181	A-7094-285-A	VC-213 (VDN) BOARD, COMPLETE (510)	
181	A-7094-286-A	VC-213 (VQDP) BOARD, COMPLETE (510E)	
182	1-673-120-11	FP-78 FLEXIBLE BOARD	
183	3-053-743-01	FRAME (A), MD	
184	A-7073-944-A	SE-88 BOARD, COMPLETE	
185	3-987-676-01	COVER (MD),FERRITE (410E:AEP,UK/510E)	
186	1-469-363-11	FILTER, EMI (MD) (410E:AEP,UK/510E)	
187	3-987-675-01	FRAME (B), MD	
188	A-7073-945-A	PJ-97 BOARD, COMPLETE (410/410E:E,HK,AUS,CN,JE/510)	
188	A-7073-981-A	PJ-97 (IM) BOARD, COMPLETE (410E:AEP,UK/510E)	
189	3-053-972-01	FRAME, LENS	
J001	1-565-276-31	JACK, ULTRA SMALL 1P (LANC)	

6-1-5. EVF AND LENS BLOCK ASSEMBLY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LCD902
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ND4801
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not supplied
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IC1401, 2401
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M906
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TO CF BOARD
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M905
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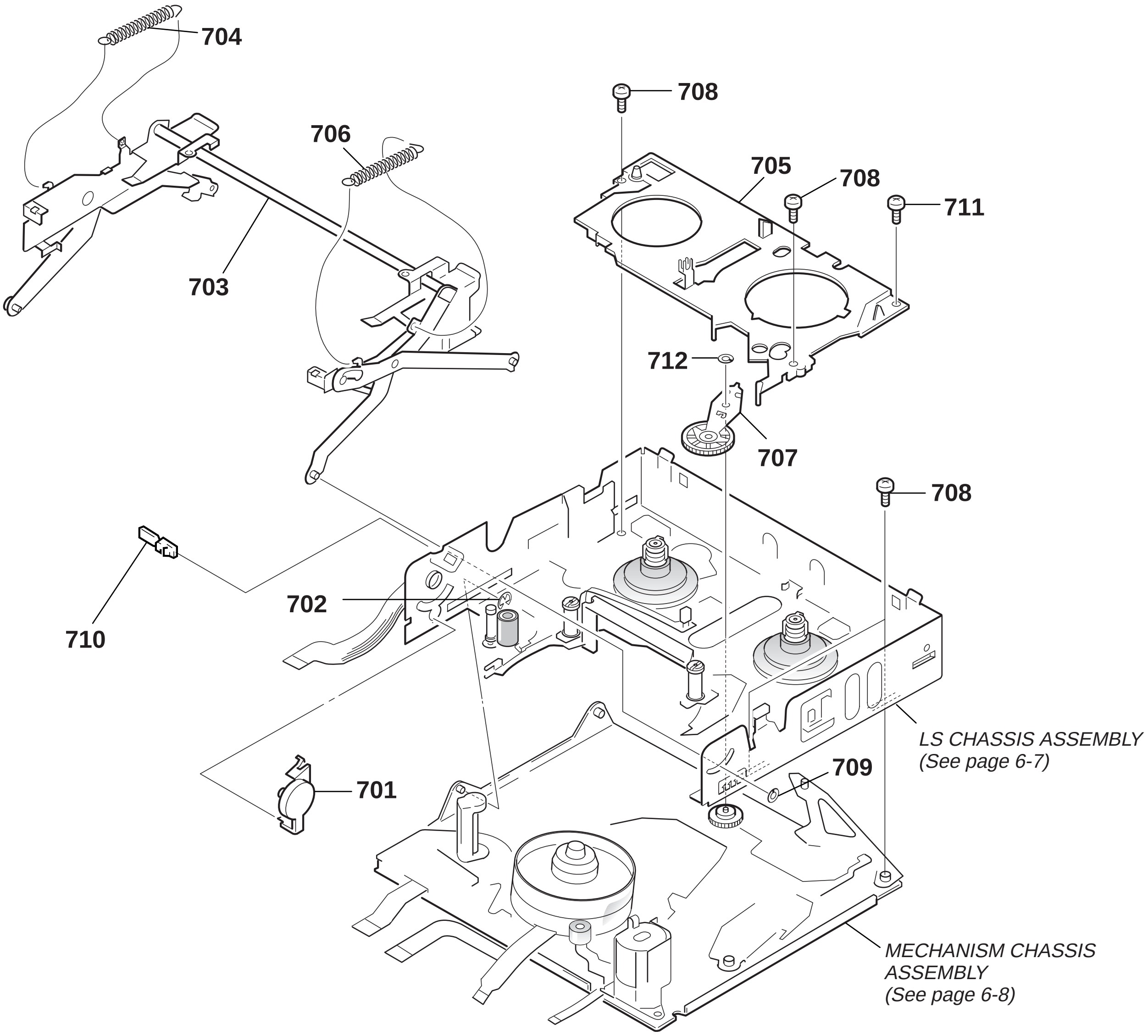
Be sure to read "Precautions upon replacing CCD imager" on page 4-11,14 when changing the CCD imager.

Ref. No.	Part No.	Description	Remarks
201	3-968-729-81	SCREW (M2), LOCK ACE, P2	
202	3-054-418-02	BASE (C) (96), VF	
203	3-053-677-01	BASE (C), SLIDE FIXED	
204	3-054-141-01	RETAINER, HARNESS	
205	X-3949-488-1	BASE (C) (96) ASSY, SLIDE	
206	X-3949-331-1	ARM (C) ASSY, CRANK	
207	3-054-417-02	CABINET (LOWER C) (96), EVF	
208	3-948-339-01	SCREW, TAPPING	
209	3-054-416-01	CABINET (UPPER C) (96), EVF	
210	X-3949-487-1	CABINET REAR (C) (96) ASSY,EVF	
211	1-672-662-11	FP-47 FLEXIBLE BOARD	
212	A-7073-876-A	VF-126 BOARD, COMPLETE	
* 213	3-989-416-11	CUSHION (458), LCD	
* 215	3-960-302-11	CUSHION (1), LCD	
216	X-3949-332-1	LENS ASSY (92), VF	
217	3-318-203-11	SCREW (B1.7X6), TAPPING	
218	A-7073-865-A	CD-212 BOARD, COMPLETE (410/510)	
218	A-7073-940-A	CD-213 BOARD, COMPLETE (410E/510E)	
219	3-968-054-11	RUBBER (FM), SHIELD	
220	1-758-155-21	FILTER BLOCK, OPTICAL (410E/510E)	
220	1-758-216-21	FILTER BLOCK, OPTICAL (410/510)	
221	3-978-981-11	ADAPTOR (FK), CCD FITTING	
222	8-848-729-01	DEVICE, LENS LSV-630A	
223	X-3949-355-1	IRIS FLEXIBLE ASSY 630 (N)	
224	3-713-791-41	SCREW, TAPPING (M1.7X5), P2	
225	3-253-799-01	GEAR, IR	
226	3-053-800-01	SPRING, RETAIN	
227	3-653-827-01	LEVER, IR	
228	3-053-853-01	TAPPING (B1.7X4)	
229	3-713-791-51	SCREW, TAPPING (M1.7X3.5), P2	
IC1401	A-7030-821-A	CCD BLOCK ASSY (410/510)	
IC2401	A-7030-885-A	CCD BLOCK ASSY (410E/510E)	
LCD902	8-753-023-89	LCX024AK-J COMPLE	
M905	1-763-262-11	MOTOR, FOCUS STEPPING	
M906	1-763-046-11	MOTOR, ZOOM STEPPING	
*⚠ND4801	3-988-563-01	ILLUMINATOR (458), BL	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-6. CASSETTE COMPARTMENT ASSEMBLY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710
LS CHASSIS ASSEMBLY
(See page 6-7)
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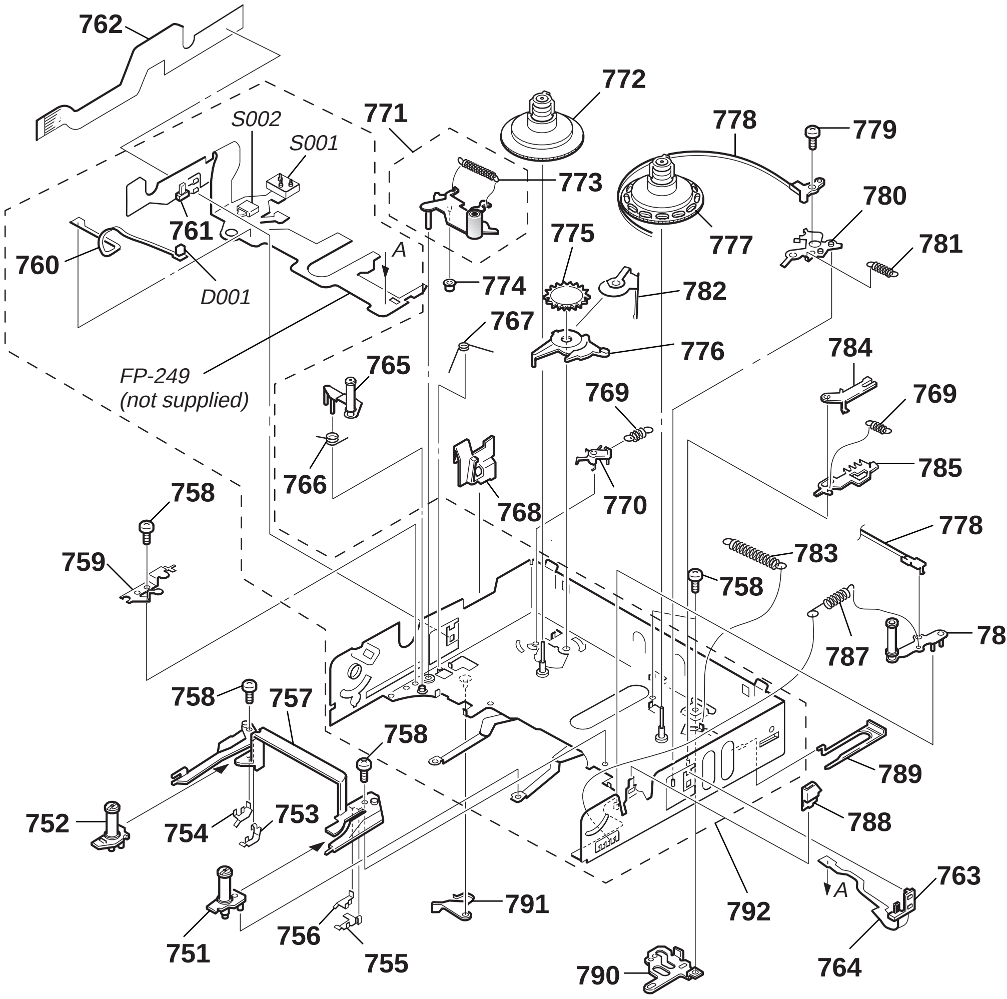
701
MECHANISM CHASSIS
ASSEMBLY
(See page 6-8)

Ref. No.	Part No.	Description	Remarks
701	A-7040-421-A	DAMPER ASSY	
702	7-624-102-04	STOP RING 1.5, TYPE -E	
703	X-3949-153-2	CASSETTE COMPARTMENT ASSY	
704	3-965-587-03	SPRING(POWER TENSION),TENSION	
705	3-989-479-01	RETAINER (2), GOOSENECK	
706	3-973-268-01	SPRING(POWER TENSION),TENSION	

Ref. No.	Part No.	Description	Remarks
707	X-3949-383-2	GEAR ASSY (E), GOOSENECK	
708	3-947-503-01	SCREW (M1.4X2.5)	
709	3-727-176-01	WASHER, STOPPER	
710	3-971-076-01	FASTENER, D	
711	3-976-055-01	SCREW (M1.4X1)	
712	3-331-007-21	WASHER	

6-1-7. LS CHASSIS ASSEMBLY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S002
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FP-249
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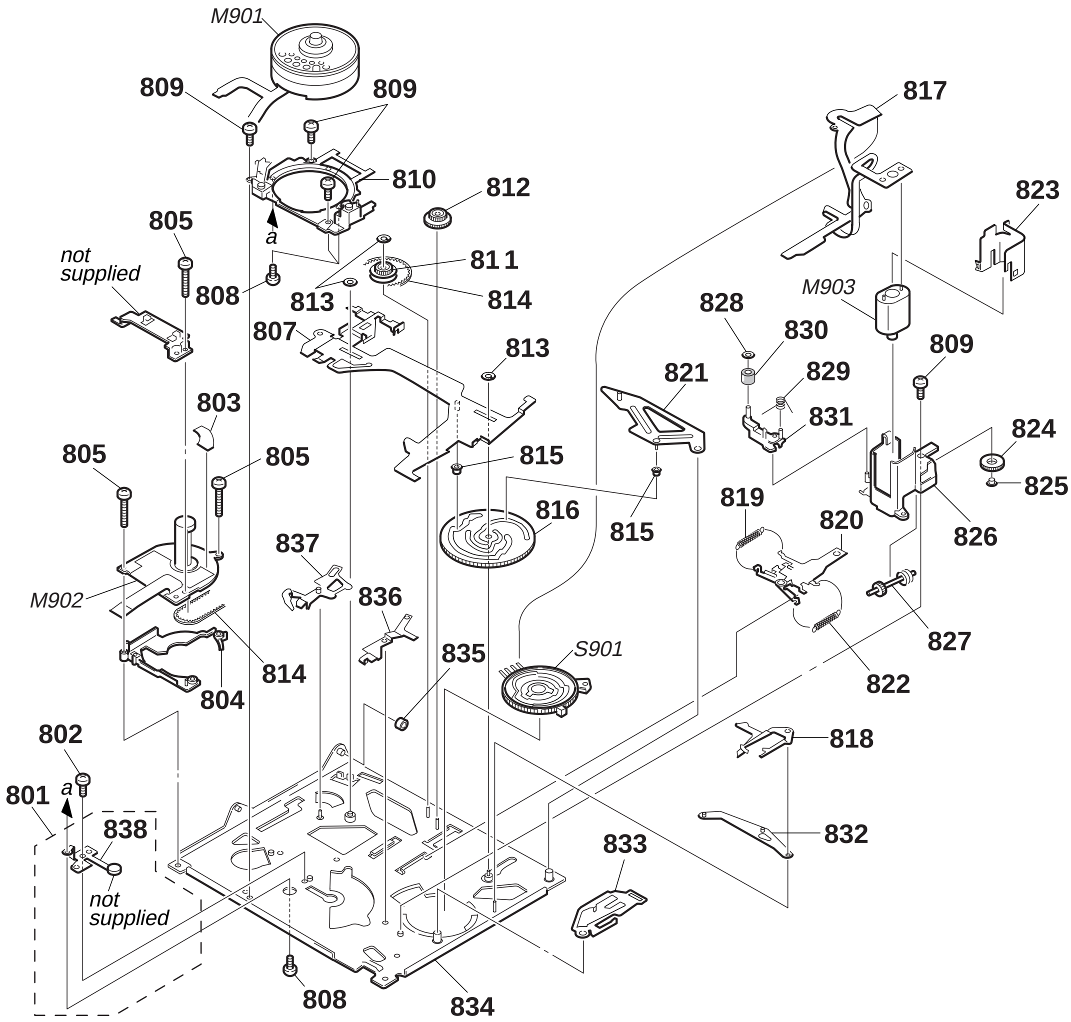
Ref. No.	Part No.	Description	Remarks
751	A-7040-419-A	BASE (S) BLOCK ASSY, GUIDE	
752	A-7040-418-B	BASE (T) BLOCK ASSY, GUIDE	
753	3-965-559-01	STOPPER (T)	
754	3-965-557-01	STOPPER (T), GB	
755	3-965-558-01	STOPPER (S)	
756	3-965-556-01	STOPPER (S), GB	
757	3-965-553-01	RAIL, GUIDE	
758	3-947-503-01	SCREW (M1.4X2.5)	
759	3-965-573-01	RETAINER, TG4	
760	1-658-213-11	FP-355 FLEXIBLE BOARD	
761	3-965-552-01	HOLDER (T), SENSOR	
762	1-657-786-13	FP-221 FLEXIBLE BOARD	
763	3-965-551-01	HOLDER (S), SENSOR	
764	1-658-214-11	FP-356 FLEXIBLE BOARD	
765	A-7040-417-A	ARM BLOCK ASSY, TG4	
766	3-965-574-01	SPRING (RETURN, TG4), TORSION	
767	3-965-575-01	SPRING (PINCH), TORSION	
768	3-965-568-11	GUIDE, LOCK	
769	3-965-562-01	SPRING (RATCHET), TENSION	
770	3-965-581-03	RATCHET, T	
771	X-3949-380-1	ARM ASSY (E), PINCH	
772	X-3945-398-2	DECK ASSY, REEL, T	
773	3-965-648-01	SPRING (PINCH), TENSION	
774	3-965-579-01	ROLLER, PINCH PRESS	
775	3-965-563-01	GEAR, T SOFT	
776	3-965-565-01	CLAW, T SOFT	
777	X-3945-397-1	DECK ASSY, REEL, S	
778	X-3945-396-1	BAND ASSY, TENSION REGULATOR	
779	3-945-756-01	SCREW (M1.4X3)	
780	3-965-583-01	ARM, RVS	
781	3-965-580-01	SPRING (ARM, RVS), TENSION	
782	3-966-384-01	SPRING, T SOFT	
783	3-965-578-01	SPRING, TENSION COIL	
784	3-965-560-01	RATCHET, S	
785	3-965-561-01	PLATE, RELEASE, S RATCHET	
786	X-3945-395-1	ARM ASSY, TG1	
787	3-965-576-01	SPRING (TG1), TENSION	
788	3-965-567-01	LID OPEN	
789	3-965-566-01	COVER, LS GUIDE	
* 790	3-965-577-01	PLATE, CAM, LS	
791	3-965-569-01	ARM, EJ	
792	A-7040-427-A	CHASSIS (S1) ASSY, LS	
D001	8-719-988-42	DIODE GL453	
S001	1-692-614-11	SWITCH, PUSH (3KEY) (Hi8 MP,ME/MP,REC PROOF)	
S002	1-572-688-11	SWITCH, PUSH (1 KEY)(C.C.LOCK)	

6-1-8. MECHANISM CHASSIS ASSEMBLY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Ref. No.	Part No.	Description	Remarks
801	X-3947-343-1	GROUND (IM) ASSY, SHAFT	
802	3-965-550-02	SCREW (M1.7X1.6)	
803	1-672-542-11	FP-38 FLEXIBLE BOARD	
804	3-053-986-01	SPACER (E), CAPSTAN	
805	3-965-549-11	SCREW (M1.4X 6.7)	
807	3-971-644-02	SLIDER (2), M	
808	X-3947-895-1	SCREW ASSY, DRUM ATTACHED	
809	3-947-503-01	SCREW (M1.4X2.5)	
810	A-7040-494-A	BASE BLOCK ASSY, DRUM	
811	3-965-527-01	GEAR, CHANGE	
812	3-965-544-01	GEAR, RELAY	
813	3-331-007-21	WASHER	
814	3-965-546-01	BELT, TIMING	
815	3-965-533-01	ROLLER, LS	
816	3-965-528-01	GEAR, CAM	
817	1-657-784-11	FP-220 FLEXIBLE BOARD	
818	3-965-529-01	PLATE, REGULATOR, TENSION	
819	3-965-536-01	SPRING (LIMITTER ARM T), COIL	
820	X-3945-388-1	SLIDER ASSY, GL	
821	3-965-532-21	ARM, LS	
822	3-965-535-01	SPRING (LIMITTER ARM S), COIL	
823	3-965-542-01	SHIELD, MOTOR	
824	3-965-539-01	GEAR (A)	
825	3-965-538-01	SLEEVE, MOTOR HOLDER	
826	3-965-540-01	HOLDER, MOTOR	
827	3-965-541-01	SHAFT, WORM	
828	3-321-393-01	WASHER, STOPPER	
829	3-965-724-01	SPRING (RETURN, HC), TORSION	
830	A-7040-423-A	ROLLER BLOCK ASSY, HC	
831	X-3945-407-1	ARM ASSY, HC ROLLER	
832	3-965-531-01	ARM, GL	
833	3-965-530-01	PLATE (2), REGULATOR, TENSION	
834	X-3949-382-4	CHASSIS ASSY (E), MECHANICAL	
835	3-965-526-02	ROLLER, LS GUIDE	
836	3-965-547-01	ARM, HC DRIVING	
837	3-965-534-01	PLATE, PRESS, PINCH	
838	3-974-320-02	GROUND (IM), SHAFT	
M901	A-7048-904-A	DRUM BLOCK ASSY (DKH-01A-R)	
M902	8-835-635-01	MOTOR, DC SCE12A/C-NP (CAPSTAN)	
M903	X-3945-401-1	MOTOR ASSY, DC (LOADING)	
S901	1-762-436-15	SWITCH, ROTARY (ENCODER) (MODE SW)	

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

410 : TRV410
410E : TRV410E
510 : TRV510
510E : TRV510E

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviation
  CND : Canadian model
  HK : Hong Kong model
  AUS : Australian model
  CN : Chinese model
  JE : Tourist model

Ref. No.	Part No.	Description			Remarks
	A-7073-865-A	CD-212 BOARD, COMPLETE (410/510)			
		**********************			
		(Ref.No.:10000 Series)			
		(IC1401 is not included in complete board.)			
		< CAPACITOR >			
C1402	1-119-751-11	TANTAL. CHIP 22uF	20%		16V
C1405	1-125-777-11	CERAMIC CHIP 0.1uF	10%		10V
C1406	1-113-682-11	TANTAL. CHIP 33uF	20%		10V
C1407	1-107-820-11	CERAMIC CHIP 0.1uF			16V
		< CONNECTOR >			
CN1401	1-766-346-21	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC1401	A-7030-821-A	CCD BLOCK ASSY (CCD IMAGER)			
		< COIL >			
L1402	1-414-757-11	INDUCTOR 100uH			
		< TRANSISTOR >			
Q1401	8-729-117-73	TRANSISTOR 2SC4178-F13F14-T1			
		< RESISTOR >			
R1401	1-218-990-11	SHORT 0			
R1402	1-218-990-11	SHORT 0			
R1403	1-218-959-11	RES,CHIP	3.3K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
	A-7073-940-A	CD-213 BOARD, COMPLETE (410E/510E)			
		**********************			
		(Ref.No.:10000 Series)			
		(IC2401 is not included in this complete board.)			
		< CAPACITOR >			
C2401	1-164-937-11	CERAMIC CHIP 0.001uF	10%		16V
C2402	1-119-751-11	TANTAL. CHIP 22uF	20%		16V
C2406	1-113-682-11	TANTAL. CHIP 33uF	20%		10V
C2407	1-107-820-11	CERAMIC CHIP 0.1uF			16V
C2408	1-135-177-21	TANTALUM CHIP 1uF	20%		20V
C2409	1-135-210-11	TANTALUM CHIP 4.7uF	20%		10V
C2411	1-164-850-11	CERAMIC CHIP 10PF	0.5PF		16V
		< CONNECTOR >			
CN2401	1-766-346-21	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC2401	A-7030-885-A	CCD BLOCK ASSY (CCD IMAGER)			
IC2402	8-759-561-46	IC AD8014ART-REEL7			
		< COIL >			
L2401	1-414-757-11	INDUCTOR 100uH			
L2402	1-414-757-11	INDUCTOR 100uH			
		< RESISTOR >			
R2401	1-218-940-11	RES,CHIP	82	5%	1/16W
R2402	1-218-990-11	SHORT 0			
R2404	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2405	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R2406	1-218-962-11	RES,CHIP	5.6K	5%	1/16W

Ref. No.	Part No.	Description	Remarks
	A-7073-949-A	CF-64 (C) BOARD, COMPLETE	
		*************************	
		(Ref.No.:7000 Series)	
		< BATTERY HOLDER >	
BH001	1-550-104-11	HOLDER, BATTERY	
		< CONNECTOR >	
CN001	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P	
CN002	1-774-765-11	CONNECTOR, FFC/FPC 8P	
* CN003	1-580-055-21	PIN, CONNECTOR (SMD) 2P	
CN006	1-778-508-21	PIN, CONNECTOR (PC BOARD) 6P	
CN007	1-779-334-11	CONNECTOR, FFC/FPC 20P	
CN009	1-778-509-21	PIN, CONNECTOR (PC BOARD) 11P	
CN010	1-774-633-11	CONNECTOR, FFC/FPC 8P	
		< DIODE >	
D001	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D005	8-719-073-03	DIODE MA8082-(K8).S0	
D006	8-719-073-03	DIODE MA8082-(K8).S0	
D008	8-719-073-01	DIODE MA111-(K8).S0	
D013	8-719-073-03	DIODE MA8082-(K8).S0	

Be sure to read “Precautions upon replacing CCD imager” on page 4-11,14 when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q003	8-729-230-63	TRANSISTOR 2SD1819A-QRS-TX			
Q005	8-729-230-72	TRANSISTOR 2SA1362-YG-EL			
		< RESISTOR >			
R003	1-216-814-11	METAL CHIP	270	5%	1/16W
R005	1-216-833-91	RES,CHIP	10K	5%	1/16W
R006	1-216-833-91	RES,CHIP	10K	5%	1/16W
R007	1-216-833-91	RES,CHIP	10K	5%	1/16W
R008	1-216-833-91	RES,CHIP	10K	5%	1/16W
R009	1-216-833-91	RES,CHIP	10K	5%	1/16W
R013	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R015	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R016	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R022	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R023	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R025	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R026	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R029	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R030	1-216-833-91	RES,CHIP	10K	5%	1/16W
R031	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R032	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R036	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R037	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R038	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R039	1-216-838-11	METAL CHIP	27K	5%	1/16W
R040	1-216-838-11	METAL CHIP	27K	5%	1/16W
R041	1-216-838-11	METAL CHIP	27K	5%	1/16W
R042	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R043	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R044	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R045	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R049	1-216-864-11	METAL CHIP	0	5%	1/16W
R050	1-216-845-11	METAL CHIP	100K	5%	1/16W
R052	1-216-816-11	METAL CHIP	390	5%	1/16W
R053	1-216-803-11	METAL CHIP	33	5%	1/16W
		< SWITCH >			
S001	1-771-138-61	SWITCH, KEY BOARD (DIGITAL EFFECT)			
S002	1-771-138-61	SWITCH, KEY BOARD (MEMORY (+))			
S003	1-771-138-61	SWITCH, KEY BOARD (DATA CODE)			
S004	1-771-029-21	SWITCH, TACTILE (PROGRAM AE)			
S005	1-771-138-61	SWITCH, KEY BOARD (MEMORY (–))			
S006	1-771-138-61	SWITCH, KEY BOARD (PICTURE EFFECT)			
S007	1-771-138-61	SWITCH, KEY BOARD (MEMORY INDEX)			
S009	1-771-138-61	SWITCH, KEY BOARD (MEMORY ERASE)			
S010	1-771-138-61	SWITCH, KEY BOARD (MENU)			
S011	1-771-138-61	SWITCH, KEY BOARD (MEMORY READ)			
S012	1-771-029-21	SWITCH, TACTILE (EXPOSURE)			
S013	1-771-138-61	SWITCH, KEY BOARD (END SEARCH)			
S015	1-771-025-41	SWITCH, ROTARY (ENCODER) (SEL/PUSH EXEC)			
S017	1-771-029-21	SWITCH, TACTILE (BACK LIGHT)			
S018	1-771-138-61	SWITCH, KEY BOARD (SELF TIMER)			
S022	1-771-138-61	SWITCH, KEY BOARD (DISPLAY)			
S024	1-762-648-21	SWITCH, SLIDE (START/STOP MODE)			
S027	1-771-029-31	SWITCH, TACTILE (FADER)			

Ref. No.	Part No.	Description			Remarks
	A-7073-922-A	DD-117 (VC) BOARD, COMPLETE (410/410E) ****************************			
	A-7073-943-A	DD-117 (VCD) BOARD, COMPLETE (510/510E) *****************************			
					(Ref.No.:6000 Series)
		< CAPACITOR >			
C801	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C802	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C803	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C804	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C805	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C806	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C807	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C808	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C809	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C810	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C811	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C812	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C813	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C815	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C817	1-113-991-11	TANTAL. CHIP	33uF	20%	16V
C818	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C819	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C820	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C821	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C823	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C824	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C825	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C826	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C827	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C828	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C829	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C830	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C831	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C832	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C833	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C834	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C836	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C837	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C838	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C840	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C841	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C842	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C843	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C844	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C846	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C847	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C848	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C849	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C850	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C851	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C852	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C853	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C854	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C855	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C856	1-109-982-11	CERAMIC CHIP	1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
C857	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C860	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C861	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C862	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C863	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C864	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C865	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C866	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C867	1-164-346-11	CERAMIC CHIP	1uF		16V
C868	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V
C869	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C871	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C872	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C873	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C875	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C876	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C877	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
* CN801	1-580-756-21	PIN, CONNECTOR (SMD) 7P			
CN931	1-774-597-41	CONNECTOR, BOARD TO BOARD 70P			
CN933	1-785-627-21	PIN, CONNECTOR (PC BOARD) 10P			
CN934	1-766-342-21	CONNECTOR, FFC/FPC 12P			
CN935	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN936	1-774-631-21	CONNECTOR, FFC/FPC 6P			
		< DIODE >			
D806	8-719-027-76	DIODE 1SS357-TPH3			
D809	8-719-027-77	DIODE MA796-TX			
D810	8-719-027-76	DIODE 1SS357-TPH3			
D812	8-719-027-76	DIODE 1SS357-TPH3			
D813	8-719-073-03	DIODE MA8082-(K8).S0			
D814	8-719-073-03	DIODE MA8082-(K8).S0			
D815	8-719-073-03	DIODE MA8082-(K8).S0			
D816	8-719-027-76	DIODE 1SS357-TPH3			
D817	8-719-421-27	DIODE MA728-(K8).S0			
D818	8-719-027-76	DIODE 1SS357-TPH3			
D819	8-719-073-01	DIODE MA111-(K8).S0			
D822	8-719-056-89	DIODE MA8120-TX			
D933	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D934	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D936	8-719-062-16	DIODE 01ZA8.2(TPL3)			
		< FERRITE BEAD >			
FB931	1-500-238-22	FERRITE	0uH		
FB932	1-500-238-22	FERRITE	0uH		
FB933	1-500-238-22	FERRITE	0uH		
		< IC >			
IC801	8-759-384-78	IC SN104241PM-TEB			
IC802	8-759-492-30	IC MB3817PFV-G-BND			
		< COIL >			
L804	1-412-056-11	INDUCTOR CHIP 4.7uH			
L805	1-409-532-41	INDUCTOR 33uH			
L806	1-424-674-11	INDUCTOR 22uH			
L807	1-424-674-11	INDUCTOR 22uH			
L808	1-424-674-11	INDUCTOR 22uH			

Ref. No.	Part No.	Description	Remarks
L809	1-424-674-11	INDUCTOR 22uH	
L810	1-414-396-21	INDUCTOR 4.7uH	
L811	1-414-396-21	INDUCTOR 4.7uH	
L812	1-414-396-21	INDUCTOR 4.7uH	
L813	1-414-396-21	INDUCTOR 4.7uH	
L814	1-414-400-11	INDUCTOR 22uH	
L815	1-414-396-21	INDUCTOR 4.7uH	
L816	1-414-396-21	INDUCTOR 4.7uH	
L817	1-414-396-21	INDUCTOR 4.7uH	
L818	1-414-396-21	INDUCTOR 4.7uH	
L819	1-414-400-11	INDUCTOR 22uH	
L820	1-424-674-11	INDUCTOR 22uH	
L821	1-412-056-11	INDUCTOR CHIP 4.7uH	
		< IC LINK >	
⚠PS801	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠PS803	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠PS804	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠PS805	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠PS806	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠PS807	1-576-286-21	FUSE, MICRO (1.4A/24V)(510/510E)	
		< TRANSISTOR >	
Q801	8-729-024-48	TRANSISTOR 2SK1830-TE85L	
Q803	8-729-804-41	TRANSISTOR 2SB1122-ST-TD	
Q804	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q805	8-729-024-48	TRANSISTOR 2SK1830-TE85L	
Q806	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q807	8-729-804-41	TRANSISTOR 2SB1122-ST-TD	
Q808	8-729-046-98	TRANSISTOR CPH6702-TL	
Q809	8-729-046-98	TRANSISTOR CPH6702-TL	
Q810	8-729-046-98	TRANSISTOR CPH6702-TL	
Q812	8-729-044-58	TRANSISTOR SI2304DS-T1	
Q813	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q814	8-729-046-98	TRANSISTOR CPH6702-TL	
Q815	8-729-046-98	TRANSISTOR CPH6702-TL	
Q817	8-729-044-58	TRANSISTOR SI2304DS-T1	
Q819	8-729-046-98	TRANSISTOR CPH6702-TL	
Q820	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q823	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q824	8-729-042-56	TRANSISTOR MGSF3455VT1	
Q826	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q827	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q828	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q829	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q830	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q831	8-729-046-75	TRANSISTOR SI2301DS-T1	
Q832	8-729-046-75	TRANSISTOR SI2301DS-T1	
Q833	8-729-041-23	TRANSISTOR NDS356AP	
Q834	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q835	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q836	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q837	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
Q838	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q839	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q840	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q841	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q842	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q843	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q844	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q845	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q846	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q847	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q848	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q849	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q850	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
⚠Q851	8-729-046-77	TRANSISTOR SI4963DY-T1			
Q852	8-729-017-61	TRANSISTOR 2SB1581-T1			
Q853	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q854	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q855	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q856	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q932	8-729-042-29	TRANSISTOR RN1104F(TPL3)			
Q933	8-729-042-29	TRANSISTOR RN1104F(TPL3)			
Q934	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
		< RESISTOR >			
R801	1-216-841-11	METAL CHIP	47K	5%	1/16W
R802	1-218-893-11	RES,CHIP	82K	0.50%	1/16W
R803	1-216-833-91	RES,CHIP	10K	5%	1/16W
R804	1-216-837-11	METAL CHIP	22K	5%	1/16W
R805	1-216-835-11	METAL CHIP	15K	5%	1/16W
R806	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R807	1-216-839-11	METAL CHIP	33K	5%	1/16W
R808	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R809	1-216-813-11	METAL CHIP	220	5%	1/16W
R810	1-216-837-11	METAL CHIP	22K	5%	1/16W
R811	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R812	1-218-901-11	RES,CHIP	180K	0.50%	1/16W
R813	1-216-853-11	METAL CHIP	470K	5%	1/16W
R814	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R815	1-216-833-91	RES,CHIP	10K	5%	1/16W
R816	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R817	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R818	1-216-813-11	METAL CHIP	220	5%	1/16W
R819	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R820	1-216-845-11	METAL CHIP	100K	5%	1/16W
R821	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R822	1-216-150-91	RES,CHIP	10	5%	1/8W
R824	1-216-837-11	METAL CHIP	22K	5%	1/16W
R825	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R826	1-216-821-11	METAL CHIP	1K	5%	1/16W
R827	1-216-821-11	METAL CHIP	1K	5%	1/16W
R828	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R829	1-216-837-11	METAL CHIP	22K	5%	1/16W
R830	1-218-883-11	RES,CHIP	33K	0.50%	1/16W
R831	1-216-841-11	METAL CHIP	47K	5%	1/16W
R832	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R833	1-216-833-91	RES,CHIP	10K	5%	1/16W
R834	1-218-881-11	RES,CHIP	27K	0.50%	1/16W
R835	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R836	1-216-837-11	METAL CHIP	22K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R837	1-218-855-11	RES,CHIP	2.2K	0.50%	1/16W
R838	1-216-837-11	METAL CHIP	22K	5%	1/16W
R839	1-216-837-11	METAL CHIP	22K	5%	1/16W
R840	1-216-839-11	METAL CHIP	33K	5%	1/16W
R841	1-216-834-11	METAL CHIP	12K	5%	1/16W
R842	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R843	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R844	1-216-296-91	SHORT 0			
R845	1-218-847-11	RES,CHIP	1K	0.50%	1/16W
R846	1-216-296-91	SHORT 0			
R847	1-216-296-91	SHORT 0			
R849	1-216-837-11	METAL CHIP	22K	5%	1/16W
R850	1-216-857-11	METAL CHIP	1M	5%	1/16W
R852	1-218-851-11	RES,CHIP	1.5K	0.50%	1/16W
R853	1-216-849-11	METAL CHIP	220K	5%	1/16W
R854	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R859	1-216-845-11	METAL CHIP	100K	5%	1/16W
R864	1-216-857-11	METAL CHIP	1M	5%	1/16W
R865	1-216-841-11	METAL CHIP	47K	5%	1/16W
R866	1-216-837-11	METAL CHIP	22K	5%	1/16W
R868	1-216-849-11	METAL CHIP	220K	5%	1/16W
R870	1-216-845-11	METAL CHIP	100K	5%	1/16W
R871	1-216-857-11	METAL CHIP	1M	5%	1/16W
R872	1-216-845-11	METAL CHIP	100K	5%	1/16W
R873	1-216-841-11	METAL CHIP	47K	5%	1/16W
R874	1-216-849-11	METAL CHIP	220K	5%	1/16W
R875	1-216-849-11	METAL CHIP	220K	5%	1/16W
R876	1-216-849-11	METAL CHIP	220K	5%	1/16W
R878	1-216-857-11	METAL CHIP	1M	5%	1/16W
R879	1-216-837-11	METAL CHIP	22K	5%	1/16W
R880	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R881	1-218-877-11	RES,CHIP	18K	0.50%	1/16W
R882	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R883	1-216-841-11	METAL CHIP	47K	5%	1/16W
R884	1-216-845-11	METAL CHIP	100K	5%	1/16W
R885	1-216-845-11	METAL CHIP	100K	5%	1/16W
R887	1-216-849-11	METAL CHIP	220K	5%	1/16W
R888	1-216-845-11	METAL CHIP	100K	5%	1/16W
R889	1-216-837-11	METAL CHIP	22K	5%	1/16W
R890	1-216-845-11	METAL CHIP	100K	5%	1/16W
R891	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R892	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R893	1-216-835-11	METAL CHIP	15K	5%	1/16W
R894	1-216-857-11	METAL CHIP	1M	5%	1/16W
R895	1-216-837-11	METAL CHIP	22K	5%	1/16W
R896	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R897	1-218-891-11	RES,CHIP	68K	0.50%	1/16W
R898	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R899	1-218-881-11	RES,CHIP	27K	0.50%	1/16W
R900	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R901	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R902	1-218-875-11	RES,CHIP	15K	0.50%	1/16W
R903	1-216-845-11	METAL CHIP	100K	5%	1/16W
R904	1-216-849-11	METAL CHIP	220K	5%	1/16W
R905	1-218-901-11	RES,CHIP	180K	0.50%	1/16W

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
R906	1-216-833-91	RES,CHIP	10K	5%	1/16W
R907	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R908	1-216-841-11	METAL CHIP	47K	5%	1/16W
R910	1-216-833-91	RES,CHIP	10K	5%	1/16W
R911	1-218-883-11	RES,CHIP	33K	0.50%	1/16W
R912	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R913	1-216-857-11	METAL CHIP	1M	5%	1/16W
R914	1-216-811-11	METAL CHIP	150	5%	1/16W
R915	1-218-911-11	RES,CHIP	470K	0.50%	1/16W
R916	1-216-864-11	METAL CHIP	0	5%	1/16W
R918	1-216-849-11	METAL CHIP	220K	5%	1/16W
R921	1-216-296-91	SHORT	0		
R922	1-216-296-91	SHORT	0		
R923	1-216-296-91	SHORT	0		
R924	1-216-849-11	METAL CHIP	220K	5%	1/16W
R925	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R926	1-216-821-11	METAL CHIP	1K	5%	1/16W
R932	1-216-841-11	METAL CHIP	47K	5%	1/16W
R933	1-216-821-11	METAL CHIP	1K	5%	1/16W
R934	1-216-821-11	METAL CHIP	1K	5%	1/16W
R935	1-216-821-11	METAL CHIP	1K	5%	1/16W
R936	1-216-821-11	METAL CHIP	1K	5%	1/16W
R937	1-216-821-11	METAL CHIP	1K	5%	1/16W
R938	1-216-821-11	METAL CHIP	1K	5%	1/16W
R939	1-216-821-11	METAL CHIP	1K	5%	1/16W
R940	1-216-819-11	METAL CHIP	680	5%	1/16W
R941	1-216-821-11	METAL CHIP	1K	5%	1/16W
R942	1-216-821-11	METAL CHIP	1K	5%	1/16W
R943	1-216-029-00	METAL CHIP	150	5%	1/10W
R945	1-217-671-11	METAL CHIP	1	5%	1/10W
		< TRANSFORMER >			
⚠T801	1-429-565-21	TRANSFORMER, CONVERTER			

Ref. No.	Part No.	Description	Remarks
		FP-249 BOARD COMPLETE (Not Supplied) *********************	
			(Ref.No.:20000 Series)
	1-658-214-11	FP-356 FLEXIBLE BOARD	
	3-965-551-01	HOLDER (S), SENSOR	
	3-965-552-01	HOLDER (T), SENSOR	
		< HOLE ELEMENT >	
H001	8-719-061-28	DIODE HW-105C-FT-V	
H002	8-719-061-28	DIODE HW-105C-FT-V	
		< TRANSISTOR >	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F	
		< SWITCH >	
S001	1-692-614-11	SWITCH, PUSH (3 KEY)	(Hi8 MP, ME/MP, REC PROOF)
S002	1-572-688-11	SWITCH, PUSH (1KEY)(C.C. LOCK)	

Ref. No.	Part No.	Description	Remarks
	1-658-213-11	FP-355 FLEXIBLE BOARD ********************	
			(Ref.No.:20000 Series)
		< DIODE >	
D001	8-719-988-42	DIODE GL453	

Ref. No.	Part No.	Description			Remarks
	A-7073-947-A	MA-356 (I) BOARD, COMPLETE **************************			
					(Ref.No.:7000 Series)
		< CAPACITOR >			
C300	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C301	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C308	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C309	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C310	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C311	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C312	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C313	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C315	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C316	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C317	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C318	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C319	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C320	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C321	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C322	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C323	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C324	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C325	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C326	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C327	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C328	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C329	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C330	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C331	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C332	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C333	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C343	1-115-156-11	CERAMIC CHIP	1uF		10V
C344	1-115-156-11	CERAMIC CHIP	1uF		10V
C345	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C346	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C347	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C348	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C349	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C350	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C351	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN300	1-779-329-11	CONNECTOR, FFC/FPC 10P			
* CN301	1-778-283-11	CONNECTOR, FFC/FPC 4P			
CN302	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
CN303	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
CN304	1-779-335-21	CONNECTOR, FFC/FPC 22P			
		< DIODE >			
D300	8-719-073-03	DIODE MA8082-(K8).S0			
D301	8-719-073-03	DIODE MA8082-(K8).S0			
D302	8-719-073-01	DIODE MA111-(K8).S0			
D303	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D304	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D305	8-749-060-65	DIODE DCC3810			
D306	8-719-061-86	DIODE DCR2810			
D308	8-719-061-82	DIODE TLSU1002(TPX1,SONY)			
D309	8-719-073-01	DIODE MA111-(K8).S0			
		< FUSE >			
⚠F300	1-533-874-11	FUSE, MICRO (200mA/24V)			
		< IC >			
IC300	8-759-494-54	IC AN2900FH-EB			
IC301	8-749-012-83	IC RS-180-T			
		< COIL >			
L300	1-414-757-11	INDUCTOR 100uH			
L301	1-414-757-11	INDUCTOR 100uH			
L302	1-414-754-11	INDUCTOR 10uH			
		< TRANSISTOR >			
Q302	8-729-140-75	TRANSISTOR 2SD999-T1-CLCK			
Q303	8-729-420-50	TRANSISTOR UN5215-(TX)			
		< RESISTOR >			
R300	1-216-864-11	METAL CHIP	0	5%	1/16W
R301	1-414-228-11	INDUCTOR CHIP 0uH (Note)			
R302	1-414-228-11	INDUCTOR CHIP 0uH (Note)			
R303	1-216-835-11	METAL CHIP	15K	5%	1/16W
R304	1-216-839-11	METAL CHIP	33K	5%	1/16W
R305	1-216-836-11	METAL CHIP	18K	5%	1/16W
R306	1-216-835-11	METAL CHIP	15K	5%	1/16W
R307	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R308	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R309	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R310	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R311	1-216-821-11	METAL CHIP	1K	5%	1/16W
R312	1-216-821-11	METAL CHIP	1K	5%	1/16W
R313	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R314	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R315	1-216-833-91	RES,CHIP	10K	5%	1/16W
R316	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R317	1-216-833-91	RES,CHIP	10K	5%	1/16W
R318	1-414-228-11	INDUCTOR CHIP 0uH (Note)			
R319	1-216-830-11	METAL CHIP	5.6K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R320	1-216-833-91	RES,CHIP	10K	5%	1/16W
R321	1-216-839-11	METAL CHIP	33K	5%	1/16W
R322	1-414-228-11	INDUCTOR CHIP 0uH (Note)			
R323	1-216-833-91	RES,CHIP	10K	5%	1/16W
R324	1-216-839-11	METAL CHIP	33K	5%	1/16W
R325	1-216-839-11	METAL CHIP	33K	5%	1/16W
R326	1-414-228-11	INDUCTOR CHIP 0uH (Note)			
R327	1-414-228-11	INDUCTOR CHIP 0uH (Note)			
R331	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R332	1-216-836-11	METAL CHIP	18K	5%	1/16W
R333	1-216-839-11	METAL CHIP	33K	5%	1/16W
R334	1-216-839-11	METAL CHIP	33K	5%	1/16W
R335	1-216-864-11	METAL CHIP	0	5%	1/16W
R336	1-216-864-11	METAL CHIP	0	5%	1/16W
R338	1-216-311-00	METAL CHIP	6.8	5%	1/10W
R339	1-216-302-00	METAL CHIP	2.7	5%	1/10W
R340	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R341	1-216-864-11	METAL CHIP	0	5%	1/16W

A-7073-946-A PC-72 BOARD, COMPLETE (510/510E)
****
(Ref.No.:8000 Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C501	1-164-315-11	CERAMIC CHIP	470PF	2%	50V
C502	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C503	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C504	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C505	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C506	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C507	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C508	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C510	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C511	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C512	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C515	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C516	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C517	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C518	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C519	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C520	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C601	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C602	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C603	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C604	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C605	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C606	1-164-315-11	CERAMIC CHIP	470PF	2%	50V
C607	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C608	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C609	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C610	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C611	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V

Note : Inductors are mounted to the location where R301,R302, R318, R322, R326, R327 are printed.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
C613	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C614	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C616	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C618	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C619	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C620	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C621	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C623	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C624	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C625	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C626	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C682	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C683	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C685	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CN501	1-785-829-21	CONNECTOR, BOARD TO BOARD 80P			
		< DIODE >			
D502	8-719-073-01	DIODE MA111-(K8).S0			
D503	8-719-072-91	DIODE MAZ9200D0LS0			
D504	8-719-072-91	DIODE MAZ9200D0LS0			
D505	8-719-056-61	DIODE 015AZ8.2-TPL3			
		< FERRITE BEAD >			
FB504	1-500-284-21	INDUCTOR CHIP 0uH			
FB601	1-414-760-21	FERRITE	0uH		
FB604	1-414-760-21	FERRITE	0uH		
FB605	1-414-760-21	FERRITE	0uH		
FB606	1-543-955-22	FERRITE	0uH		
FB681	1-414-760-21	FERRITE	0uH		
FB682	1-414-760-21	FERRITE	0uH		
		< IC >			
IC501	8-759-492-30	IC MB3817PFV-G-BND			
IC502	8-759-495-15	IC uPD4721GS-GJG-E2			
IC601	8-759-585-31	IC HD6437042AP12XSZ			
IC603	8-759-578-32	IC MSM54V16258AS-45TDR1			
IC604	8-759-327-60	IC TC7W125FU-TE12R			
IC605	8-759-196-96	IC TC7SH08FU-TE85R			
IC606	8-752-395-94	IC CXD3133AR			
IC607	8-759-445-93	IC AK6440AM-E2			
IC608	8-759-547-24	IC RL5V834/E2H			
IC609	8-759-578-32	IC MSM54V16258AS-45TDR1			
IC610	8-759-547-46	IC MSM9831-104MAZ060			
IC681	8-759-271-86	IC TC7SH04FU-TE85R			
IC682	8-759-587-60	IC CXD8650R-E2			
IC683	8-759-566-78	IC TC58V16BFT-EL			
		< JACK >			
J501	1-785-921-11	JACK (SMALL TYPE) 6P (DIGITAL I/O)			
		< COIL >			
L502	1-416-345-11	INDUCTOR 22uH			
L503	1-414-396-21	INDUCTOR 4.7uH			

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q501	8-729-046-98	TRANSISTOR CPH6702-TL			
Q601	8-729-042-29	TRANSISTOR RN1104F(TPL3)			
Q602	8-729-042-29	TRANSISTOR RN1104F(TPL3)			
Q603	8-729-037-61	TRANSISTOR RN2104F(TPL3)			
		< RESISTOR >			
R501	1-216-811-11	METAL CHIP	150	5%	1/16W
R502	1-216-833-91	RES,CHIP	10K	5%	1/16W
R503	1-216-835-11	METAL CHIP	15K	5%	1/16W
R504	1-218-861-11	RES,CHIP	3.9K	0.50%	1/16W
R505	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R506	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R507	1-216-296-91	SHORT 0			
R509	1-216-864-11	METAL CHIP	0	5%	1/16W
R602	1-216-864-11	METAL CHIP	0	5%	1/16W
R603	1-216-864-11	METAL CHIP	0	5%	1/16W
R605	1-216-864-11	METAL CHIP	0	5%	1/16W
R606	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R607	1-216-814-11	METAL CHIP	270	5%	1/16W
R609	1-216-864-11	METAL CHIP	0	5%	1/16W
R610	1-216-812-11	METAL CHIP	180	5%	1/16W
R611	1-216-800-11	RES,CHIP	18	5%	1/16W
R612	1-216-864-11	METAL CHIP	0	5%	1/16W
R614	1-216-841-11	METAL CHIP	47K	5%	1/16W
R615	1-216-841-11	METAL CHIP	47K	5%	1/16W
R617	1-216-864-11	METAL CHIP	0	5%	1/16W
R618	1-216-845-11	METAL CHIP	100K	5%	1/16W
R619	1-216-845-11	METAL CHIP	100K	5%	1/16W
R620	1-216-845-11	METAL CHIP	100K	5%	1/16W
R621	1-216-845-11	METAL CHIP	100K	5%	1/16W
R622	1-216-845-11	METAL CHIP	100K	5%	1/16W
R623	1-216-845-11	METAL CHIP	100K	5%	1/16W
R624	1-216-845-11	METAL CHIP	100K	5%	1/16W
R625	1-216-845-11	METAL CHIP	100K	5%	1/16W
R626	1-216-845-11	METAL CHIP	100K	5%	1/16W
R627	1-216-845-11	METAL CHIP	100K	5%	1/16W
R628	1-216-845-11	METAL CHIP	100K	5%	1/16W
R629	1-216-845-11	METAL CHIP	100K	5%	1/16W
R630	1-216-845-11	METAL CHIP	100K	5%	1/16W
R631	1-216-845-11	METAL CHIP	100K	5%	1/16W
R632	1-216-845-11	METAL CHIP	100K	5%	1/16W
R633	1-216-845-11	METAL CHIP	100K	5%	1/16W
R634	1-216-845-11	METAL CHIP	100K	5%	1/16W
R635	1-216-845-11	METAL CHIP	100K	5%	1/16W
R636	1-216-845-11	METAL CHIP	100K	5%	1/16W
R637	1-216-845-11	METAL CHIP	100K	5%	1/16W
R638	1-216-845-11	METAL CHIP	100K	5%	1/16W
R639	1-216-845-11	METAL CHIP	100K	5%	1/16W
R640	1-216-845-11	METAL CHIP	100K	5%	1/16W
R641	1-216-845-11	METAL CHIP	100K	5%	1/16W
R642	1-216-845-11	METAL CHIP	100K	5%	1/16W
R645	1-216-864-11	METAL CHIP	0	5%	1/16W
R646	1-216-845-11	METAL CHIP	100K	5%	1/16W
R647	1-216-833-91	RES,CHIP	10K	5%	1/16W
R648	1-216-833-91	RES,CHIP	10K	5%	1/16W
R649	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R650	1-216-864-11	METAL CHIP	0	5%	1/16W
R651	1-216-845-11	METAL CHIP	100K	5%	1/16W
R652	1-216-833-91	RES,CHIP	10K	5%	1/16W
R653	1-216-813-11	METAL CHIP	220	5%	1/16W
R656	1-216-845-11	METAL CHIP	100K	5%	1/16W
R657	1-216-809-11	METAL CHIP	100	5%	1/16W
R658	1-216-841-11	METAL CHIP	47K	5%	1/16W
R659	1-216-841-11	METAL CHIP	47K	5%	1/16W
R660	1-216-864-11	METAL CHIP	0	5%	1/16W
R661	1-216-864-11	METAL CHIP	0	5%	1/16W
R662	1-216-864-11	METAL CHIP	0	5%	1/16W
R663	1-216-845-11	METAL CHIP	100K	5%	1/16W
R664	1-216-845-11	METAL CHIP	100K	5%	1/16W
R665	1-216-845-11	METAL CHIP	100K	5%	1/16W
R666	1-216-845-11	METAL CHIP	100K	5%	1/16W
R681	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R682	1-216-864-11	METAL CHIP	0	5%	1/16W
R685	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VIBERATOR >			
X601	1-781-362-21	VIBRATOR, LITHIUM NIOBATE (6.875MHz)			

A-7073-948-A PD-106 (CA) BOARD, COMPLETE
****
(Ref.No.:10000 Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C5501	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5502	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5504	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5505	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5506	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C5507	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5508	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5509	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C5511	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5512	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5513	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5514	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C5515	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C5516	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C5517	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5518	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5519	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5520	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5602	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C5603	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C5604	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5605	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5607	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C5608	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C5610	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C5612	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C5616	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5620	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5621	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C5622	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C5623	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C5624	1-107-688-11	TANTAL. CHIP	1.5uF	20%	10V
C5625	1-107-688-11	TANTAL. CHIP	1.5uF	20%	10V
C5633	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C5701	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C5702	1-164-346-11	CERAMIC CHIP	1uF		16V
C5703	1-164-661-11	CERAMIC CHIP	0.018uF	10%	50V
C5704	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
⚠C5705	1-113-521-11	CERAMIC CHIP	12PF	10%	3KV
C5706	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5900	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
* CN5501	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN5601	1-691-362-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN5701	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN5900	1-785-627-21	PIN, CONNECTOR (PC BOARD) 10P			
CN5901	1-778-508-21	PIN, CONNECTOR (PC BOARD) 6P			
CN5902	1-778-509-21	PIN, CONNECTOR (PC BOARD) 11P			
CN5903	1-764-705-11	CONNECTOR, FFC/FPC (LIF) 6P			
CN5904	1-766-336-21	CONNECTOR, FFC/FPC 6P			
CN5905	1-764-532-21	CONNECTOR, FFC/FPC (ZIF) 26P			
		< DIODE >			
D5604	8-719-422-23	DIODE MA8047-TX			
D5605	8-713-102-80	DIODE 1T369-01-T8A			
⚠D5704	8-719-073-01	DIODE MA111-(K8).S0			
		< IC >			
IC5501	8-759-364-05	IC M62376GP-65AD			
IC5502	8-759-539-27	IC IR3Y37A4			
IC5601	8-759-530-20	IC CM7017L3-T4			
IC5602	8-759-327-01	IC NJM062V(TE2)			
IC5701	8-759-075-70	IC TA75S393F-TE85R			
IC5900	8-759-573-02	IC BU9729K-E2			
		< COIL >			
L5501	1-414-754-11	INDUCTOR 10uH			
L5502	1-414-754-11	INDUCTOR 10uH			
L5503	1-414-754-11	INDUCTOR 10uH			
L5601	1-414-754-11	INDUCTOR 10uH			
L5603	1-414-754-11	INDUCTOR 10uH			
L5604	1-414-754-11	INDUCTOR 10uH			
L5605	1-412-951-11	INDUCTOR 10uH			
L5701	1-409-536-41	INDUCTOR 150uH			
		< TRANSISTOR >			
Q5501	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q5605	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q5606	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q5607	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q5608	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q5701	8-729-039-43	TRANSISTOR FP216-TL			
Q5702	8-729-042-58	TRANSISTOR RN2102F(TPL3)			

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R5501	1-216-840-11	METAL CHIP	39K	5%	1/16W
R5505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5508	1-218-885-11	RES,CHIP	39K	0.50%	1/16W
R5509	1-218-875-11	RES,CHIP	15K	0.50%	1/16W
R5512	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5513	1-216-834-11	METAL CHIP	12K	5%	1/16W
R5516	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5517	1-216-835-11	METAL CHIP	15K	5%	1/16W
R5518	1-216-839-11	METAL CHIP	33K	5%	1/16W
R5520	1-216-850-11	METAL CHIP	270K	5%	1/16W
R5521	1-216-834-11	METAL CHIP	12K	5%	1/16W
R5522	1-216-843-11	METAL CHIP	68K	5%	1/16W
R5528	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R5531	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5532	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5537	1-216-833-91	RES,CHIP	10K	5%	1/16W
R5541	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R5542	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R5544	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5602	1-216-864-11	METAL CHIP	0	5%	1/16W
R5603	1-216-864-11	METAL CHIP	0	5%	1/16W
R5604	1-216-864-11	METAL CHIP	0	5%	1/16W
R5606	1-216-864-11	METAL CHIP	0	5%	1/16W
R5610	1-216-842-11	METAL CHIP	56K	5%	1/16W
R5612	1-216-833-91	RES,CHIP	10K	5%	1/16W
R5613	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5615	1-216-844-11	METAL CHIP	82K	5%	1/16W
R5617	1-216-833-91	RES,CHIP	10K	5%	1/16W
R5622	1-216-844-11	METAL CHIP	82K	5%	1/16W
R5623	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5624	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5625	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R5627	1-218-899-11	RES,CHIP	150K	0.50%	1/16W
R5628	1-216-864-11	METAL CHIP	0	5%	1/16W
R5630	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5632	1-216-864-11	METAL CHIP	0	5%	1/16W
R5640	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R5641	1-218-883-11	RES,CHIP	33K	0.50%	1/16W
R5643	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5644	1-216-839-11	METAL CHIP	33K	5%	1/16W
R5646	1-216-864-11	METAL CHIP	0	5%	1/16W
R5647	1-216-864-11	METAL CHIP	0	5%	1/16W
R5648	1-216-864-11	METAL CHIP	0	5%	1/16W
R5652	1-216-864-11	METAL CHIP	0	5%	1/16W
R5663	1-414-228-11	INDUCTOR CHIP 0uH (Note)			
R5664	1-216-864-11	METAL CHIP	0	5%	1/16W
R5665	1-216-864-11	METAL CHIP	0	5%	1/16W
R5666	1-216-864-11	METAL CHIP	0	5%	1/16W
R5667	1-216-864-11	METAL CHIP	0	5%	1/16W
R5668	1-216-864-11	METAL CHIP	0	5%	1/16W
R5672	1-216-836-11	METAL CHIP	18K	5%	1/16W
R5673	1-216-864-11	METAL CHIP	0	5%	1/16W
R5678	1-216-864-11	METAL CHIP	0	5%	1/16W
R5682	1-216-805-11	METAL CHIP	47	5%	1/16W
R5683	1-216-805-11	METAL CHIP	47	5%	1/16W

Note : Inductors are mounted to the location where Resistor R5663 is printed.

Ref. No.	Part No.	Description			Remarks
R5684	1-216-805-11	METAL CHIP	47	5%	1/16W
R5685	1-216-842-11	METAL CHIP	56K	5%	1/16W
R5686	1-216-842-11	METAL CHIP	56K	5%	1/16W
R5688	1-216-864-11	METAL CHIP	0	5%	1/16W
R5692	1-216-851-11	METAL CHIP	330K	5%	1/16W
R5694	1-216-833-91	RES,CHIP	10K	5%	1/16W
R5695	1-216-833-91	RES,CHIP	10K	5%	1/16W
R5697	1-216-864-11	METAL CHIP	0	5%	1/16W
R5698	1-216-864-11	METAL CHIP	0	5%	1/16W
R5703	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5704	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5705	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5706	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R5707	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5708	1-216-810-11	METAL CHIP	120	5%	1/16W
R5709	1-216-817-11	METAL CHIP	470	5%	1/16W
R5710	1-216-816-11	METAL CHIP	390	5%	1/16W
R5900	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R5901	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R5902	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R5903	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R5904	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R5905	1-216-838-11	METAL CHIP	27K	5%	1/16W
R5906	1-216-855-11	METAL CHIP	680K	5%	1/16W
R5907	1-216-864-11	METAL CHIP	0	5%	1/16W
R5911	1-216-864-11	METAL CHIP	0	5%	1/16W
		< TRANSFORMER >			
⚠T5701	1-431-753-11	TRANSFORMER, INVERTER			

A-7073-945-A PJ-97 BOARD, COMPLETE
(410/410E:E,HK,AUS,CN,JE/510)
****
A-7073-981-A PJ-97(IM) BOARD, COMPLETE
(410E:AEP,UK/510E)
****
(Ref.No.:7000 Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C101	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C103	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)
C104	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)
C105	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)
C106	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)
C107	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)
C108	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)
C112	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)
C113	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (410E:AEP,UK/510E)

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

PJ-97 **SE-88** **VC-213**

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN101	1-785-685-21	CONNECTOR, FFC/FPC (ZIF) 14P			
		< DIODE >			
D101	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D102	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D103	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D104	8-719-073-03	DIODE MA8082-(K8).S0			
D105	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D106	8-719-062-16	DIODE 01ZA8.2(TPL3)			
		< JACK >			
J101	1-537-747-21	TERMINAL BOARD (S VIDEO/VIDEO/AUDIO)			
		< COIL >			
L101	1-414-072-11	INDUCTOR 1uH			
L102	1-216-295-91	SHORT	0 (Note 1)		(410/410E:E,HK,AUS,CN,JE/510)
L102	1-412-963-11	INDUCTOR 100uH (410E:AEP,UK/510E)			
L103	1-216-295-91	SHORT	0 (Note 1)		(410/410E:E,HK,AUS,CN,JE/510)
L103	1-412-963-11	INDUCTOR 100uH (410E:AEP,UK/510E)			
L104	1-216-295-91	SHORT	0 (Note 1)		(410/410E:E,HK,AUS,CN,JE/510)
L104	1-412-963-11	INDUCTOR 100uH (410E:AEP,UK/510E)			
L105	1-216-295-91	SHORT	0 (Note 1)		(410/410E:E,HK,AUS,CN,JE/510)
L105	1-412-963-11	INDUCTOR 100uH (410E:AEP,UK/510E)			
		< TRANSISTOR >			
Q101	8-729-101-07	TRANSISTOR 2SB798-T1-DLDK			
Q102	8-729-230-63	TRANSISTOR 2SD1819A-QRS-TX			
		< RESISTOR >			
R101	1-500-283-11	INDUCTOR CHIP 0uH (Note 2)			
R102	1-216-138-00	METAL CHIP	3.3	5%	1/8W
R103	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R104	1-216-820-11	METAL CHIP	820	5%	1/16W
R105	1-216-836-11	METAL CHIP	18K	5%	1/16W
R106	1-500-283-11	INDUCTOR CHIP 0uH (Note 2)			
R107	1-500-283-11	INDUCTOR CHIP 0uH (Note 2)			
R108	1-216-821-11	METAL CHIP	1K	5%	1/16W
R109	1-216-821-11	METAL CHIP	1K	5%	1/16W
R110	1-216-864-11	METAL CHIP	0	5%	1/16W
R111	1-414-228-11	INDUCTOR CHIP 0uH (Note 2)			
R112	1-414-228-11	INDUCTOR CHIP 0uH (Note 2)			
R113	1-414-228-11	INDUCTOR CHIP 0uH (Note 2)			
R114	1-414-228-11	INDUCTOR CHIP 0uH (Note 2)			
R115	1-414-228-11	INDUCTOR CHIP 0uH (Note 2)			

A-7073-944-A SE-88 BOARD, COMPLETE
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(Ref.No.:7000 Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C604	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C607	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C608	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C609	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C610	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
C611	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C612	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
C614	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C616	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C617	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN601	1-691-350-21	CONNECTOR, FFC/FPC (ZIF) 12P			
CN602	1-785-828-11	CONNECTOR, SQUARE TYPE 4P (DV)			
		< IC >			
IC601	8-759-489-19	IC uPC6756GR-8JG-E2			
		< COIL >			
L601	1-414-754-11	INDUCTOR 10uH			
		< RESISTOR >			
R601	1-216-837-11	METAL CHIP	22K	5%	1/16W
R602	1-216-837-11	METAL CHIP	22K	5%	1/16W
R603	1-216-837-11	METAL CHIP	22K	5%	1/16W
R604	1-216-837-11	METAL CHIP	22K	5%	1/16W
R605	1-216-864-11	METAL CHIP	0	5%	1/16W
R606	1-216-857-11	METAL CHIP	1M	5%	1/16W
R607	1-216-833-91	RES,CHIP	10K	5%	1/16W
R608	1-216-833-91	RES,CHIP	10K	5%	1/16W
R609	1-216-857-11	METAL CHIP	1M	5%	1/16W
R611	1-216-835-11	METAL CHIP	15K	5%	1/16W
R613	1-216-864-11	METAL CHIP	0	5%	1/16W
R614	1-216-864-11	METAL CHIP	0	5%	1/16W
		< SENSOR >			
SE651	1-803-042-31	SENSOR, ANGULAR VELOCITY (PITCH)			
SE652	1-803-042-41	SENSOR, ANGULAR VELOCITY (YAW)			

A-7094-282-A VC-213(VN) BOARD, COMPLETE (SERVICE ASSY)(410)
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A-7094-283-A VC-213 (VQP) BOARD, COMPLETE (SERVICE ASSY)(410E)
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A-7094-285-A VC-213 (VDN) BOARD, COMPLETE (SERVICE ASSY)(510)
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A-7094-286-A VC-213(VQDP) BOARD, COMPLETE (SERVICE ASSY)(510E)
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(Ref.No.:3000 Series)

Note 1: Resistors are mounted to the location where L102 – L105 are printed.
Note 2: Inductors are mounted to the location where R101, R106, R107, R111 – R115 are printed.

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C101	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C102	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C103	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C104	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C105	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C106	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C107	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C108	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C109	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C111	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C112	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C113	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C115	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C116	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C117	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C118	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C119	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C120	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C121	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C122	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C123	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C124	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C125	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C126	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C127	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C128	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C129	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C130	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C131	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C132	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C133	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C135	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C136	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C137	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C138	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C139	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C141	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C142	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C143	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C144	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C145	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C146	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C147	1-164-878-11	CERAMIC CHIP	150PF	5%	16V
C149	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C150	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C151	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C170	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C172	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C174	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C175	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C176	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C177	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C178	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C179	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C180	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C182	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C201	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C202	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C203	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C204	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C205	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C206	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C207	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C209	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C211	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C213	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V
C214	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C215	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C217	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C219	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C221	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C222	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C223	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C224	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C225	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C227	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C228	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C229	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C230	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C231	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C234	1-115-156-11	CERAMIC CHIP	1uF		10V
C236	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C252	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C253	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C254	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C255	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C256	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C257	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C258	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C259	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C260	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C261	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C262	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C264	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C265	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C266	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C267	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C268	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C269	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C270	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C272	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C273	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C274	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C276	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C278	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C281	1-115-156-11	CERAMIC CHIP	1uF		10V
C284	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C285	1-164-852-11	CERAMIC CHIP	12PF	5%	16V
C286	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C287	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V

VC-213

Ref. No.	Part No.	Description			Remarks
C288	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C289	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C291	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C292	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C293	1-164-346-11	CERAMIC CHIP	1uF		16V
C301	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C302	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C303	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C304	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C305	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C306	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C307	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C308	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C309	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C310	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C311	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C312	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (410E/510E)
C312	1-164-858-11	CERAMIC CHIP	22PF	5%	16V (410/510)
C313	1-164-882-11	CERAMIC CHIP	220PF	5%	16V (410/510)
C314	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C315	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C316	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C317	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C318	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C319	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C320	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C321	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C322	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C323	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C351	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C352	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C353	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C354	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C355	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C356	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C357	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C401	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C404	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C405	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C406	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C407	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C451	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C452	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C453	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C454	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C455	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C456	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C457	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C458	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C459	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C460	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C461	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C462	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C463	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C464	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C465	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C466	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C467	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C468	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C469	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C470	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C471	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C472	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C473	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C474	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C475	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C476	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C477	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C479	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C480	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C481	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C482	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C483	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C484	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C485	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C486	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C501	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C502	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C503	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C504	1-115-156-11	CERAMIC CHIP	1uF		10V
C505	1-115-156-11	CERAMIC CHIP	1uF		10V
C506	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C507	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C509	1-115-156-11	CERAMIC CHIP	1uF		10V
C510	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C511	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C513	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C514	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C515	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C517	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C518	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C519	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C520	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C521	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C522	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C523	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C524	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C525	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C526	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C527	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C528	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C529	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C530	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C531	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (410E/510E)
C532	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (410E/510E)
C533	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (410E/510E)
C534	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V (410E/510E)
C535	1-135-201-11	TANTALUM CHIP	10uF	20%	4V (410E/510E)
C536	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (410E/510E)
C537	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (410E/510E)

Ref. No.	Part No.	Description			Remarks
C551	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C552	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C553	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C554	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C555	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C556	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C557	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C558	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C559	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C560	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C561	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C563	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C564	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C565	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C566	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C567	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C568	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C569	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C570	1-115-156-11	CERAMIC CHIP	1uF		10V
C571	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C590	1-164-878-11	CERAMIC CHIP	150PF	5%	16V
C591	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C592	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C593	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C594	1-164-878-11	CERAMIC CHIP	150PF	5%	16V
C601	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C602	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C603	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C604	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C605	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C606	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C607	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C608	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C609	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C610	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C611	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C612	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C613	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C614	1-164-854-11	CERAMIC CHIP	15PF	5%	16V
C615	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C616	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C617	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C618	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C619	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C620	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C621	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C622	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	16V
C623	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C624	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C625	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C626	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C627	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C628	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C629	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C630	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C631	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C632	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C633	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C634	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C635	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C636	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C637	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C638	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C639	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C641	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C642	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C643	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C644	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C645	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C646	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C647	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C648	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C649	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C650	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C651	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C652	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C653	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C654	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C655	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C656	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C657	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C658	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C659	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C660	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C661	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C662	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C663	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C664	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C665	1-164-668-11	CERAMIC CHIP	510PF	5%	50V
C666	1-125-899-11	TANTAL. CHIP	220uF	20%	4V
C667	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C668	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C669	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C670	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C671	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C672	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C673	1-164-844-11	CERAMIC CHIP	4PF	0.25PF	16V
C674	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C675	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C676	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C677	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C678	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C679	1-125-899-11	TANTAL. CHIP	220uF	20%	4V
C680	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C681	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C682	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C684	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C685	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C686	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C687	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C688	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C690	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C691	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C692	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C693	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C694	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C695	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C696	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C701	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C702	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V

VC-213

Ref. No.	Part No.	Description			Remarks
C703	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C704	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C705	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C706	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C707	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C708	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C709	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C710	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C711	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C712	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C713	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C714	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C715	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C716	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C717	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C718	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C719	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C720	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C721	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C722	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C723	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C724	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C725	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C726	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C727	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C728	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C731	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C732	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C733	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C734	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C735	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C736	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C737	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C738	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C739	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C740	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C741	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C742	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C743	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C744	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C745	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C746	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C747	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C748	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C749	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C750	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C761	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C762	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C763	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C765	1-109-982-11	CERAMIC CHIP	1uF	10%	10V (410E/510E)
C766	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C767	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (410E/510E)
C768	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V (410/510)
C768	1-218-973-11	RES,CHIP	47K	5%	1/16W (Note)(410E/510E)
C769	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (410E/510E)
C769	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V (410/510)
C770	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (410/510)
C770	1-218-990-11	SHORT	0		(Note)(410E/510E)
C771	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C772	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V (410E/510E)
C772	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (410/510)
C773	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C774	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (410/510)
C775	1-109-982-11	CERAMIC CHIP	1uF	10%	10V (410E/510E)
C775	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (410/510)
C776	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (410/510)
C777	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C778	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V (410E/510E)
C778	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V (410/510)
C779	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C780	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V (410/510)
C781	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C782	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (410/510)
C783	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C784	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C785	1-109-982-11	CERAMIC CHIP	1uF	10%	10V (410/510)
C785	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V (410E/510E)
C786	1-109-982-11	CERAMIC CHIP	1uF	10%	10V (410/510)
C786	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V (410E/510E)
C787	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V (410E/510E)
C787	1-109-982-11	CERAMIC CHIP	1uF	10%	10V (410/510)
C788	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V (410E/510E)
C788	1-109-982-11	CERAMIC CHIP	1uF	10%	10V (410/510)
C789	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V (410E/510E)
C790	1-162-963-11	CERAMIC CHIP	680PF	10%	50V (410E/510E)
C790	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V (410/510)
C791	1-164-936-11	CERAMIC CHIP	680PF	10%	16V (410E/510E)
C791	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (410/510)
C792	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C793	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Note : Resistors are mounted to the location where C768,C770 are printed.

Ref. No.	Part No.	Description			Remarks
C794	1-164-870-11	CERAMIC CHIP	68PF	5%	16V
C801	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C802	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C803	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C804	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C805	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
C806	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C807	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C808	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C809	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C810	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C811	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C812	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C813	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C814	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C815	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C817	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C818	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C819	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C820	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C821	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C822	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C823	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C824	1-164-854-11	CERAMIC CHIP	15PF	5%	16V
C825	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C826	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C827	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C901	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C902	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C903	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C905	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C906	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C907	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C908	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C909	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C910	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C911	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C912	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C913	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C914	1-107-820-11	CERAMIC CHIP	0.1uF		16V

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
CN101	1-766-346-21	CONNECTOR, FFC/FPC 16P	
CN501	1-779-332-11	CONNECTOR, FFC/FPC 16P	
CN551	1-573-364-11	CONNECTOR, FFC/FPC 24P	
CN901	1-766-644-21	CONNECTOR, FFC/FPC 8P	
CN902	1-785-829-21	CONNECTOR, BOARD TO BOARD 80P	(510/510E)
CN903	1-766-352-21	CONNECTOR, FFC/FPC 22P	
CN904	1-766-356-21	CONNECTOR, FFC/FPC 26P	
CN905	1-766-646-21	CONNECTOR, FFC/FPC 10P	
CN906	1-766-342-21	CONNECTOR, FFC/FPC 12P	
CN908	1-766-345-21	CONNECTOR, FFC/FPC 15P	
CN909	1-766-340-21	CONNECTOR, FFC/FPC 10P	
CN910	1-766-350-21	CONNECTOR, FFC/FPC 20P	
CN911	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P	
CN914	1-774-600-41	CONNECTOR, BOARD TO BOARD 70P	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D251	8-719-055-86	DIODE KV1470TL1-3	
D252	8-719-055-86	DIODE KV1470TL1-3	
D253	8-713-103-84	DIODE 1T379-01-T8A	
D301	8-719-055-86	DIODE KV1470TL1-3	
D501	8-713-103-84	DIODE 1T379-01-T8A	
D551	8-719-073-01	DIODE MA111-(K8).S0	
D601	8-719-071-32	DIODE HVC350BTRF	
D602	8-719-071-32	DIODE HVC350BTRF	
D801	8-719-421-27	DIODE MA728-(K8).S0	
D802	8-719-421-27	DIODE MA728-(K8).S0	
D803	8-719-421-27	DIODE MA728-(K8).S0	
D804	8-719-056-23	DIODE MA2S111-(K8).SO	
D805	8-719-056-23	DIODE MA2S111-(K8).SO	
D970	8-719-073-03	DIODE MA8082-(K8).S0	
D971	8-719-062-16	DIODE 01ZA8.2(TPL3)	

< FERRITE BEAD >

Ref. No.	Part No.	Description		Remarks
FB101	1-500-238-22	FERRITE	0uH	
FB102	1-500-238-22	FERRITE	0uH	
FB252	1-500-238-22	FERRITE	0uH	
FB253	1-500-238-22	FERRITE	0uH	
FB254	1-500-238-22	FERRITE	0uH	
FB256	1-500-284-21	INDUCTOR CHIP	0uH	
FB257	1-500-238-22	FERRITE	0uH	
FB291	1-500-238-22	FERRITE	0uH	
FB302	1-500-238-22	FERRITE	0uH	
FB303	1-500-238-22	FERRITE	0uH	
FB304	1-500-238-22	FERRITE	0uH	
FB401	1-500-238-22	FERRITE	0uH	
FB501	1-500-238-22	FERRITE	0uH	
FB502	1-500-284-21	INDUCTOR CHIP	0uH	
FB503	1-500-284-21	INDUCTOR CHIP	0uH	
FB504	1-500-238-22	FERRITE	0uH	
FB505	1-500-238-22	FERRITE	0uH	(410E/510E)
FB506	1-500-238-22	FERRITE	0uH	(410E/510E)
FB507	1-500-284-21	INDUCTOR CHIP	0uH	(410E/510E)
FB508	1-500-284-21	INDUCTOR CHIP	0uH	(410E/510E)
FB606	1-500-238-22	FERRITE	0uH	
FB801	1-500-238-22	FERRITE	0uH	
FB901	1-500-238-22	FERRITE	0uH	

< IC >

Ref. No.	Part No.	Description	Remarks
IC101	8-759-195-81	IC TC7S86FU(TE85R)	
IC102	8-752-086-53	IC CXA2072R-T4	
IC103	8-752-086-52	IC CXA2071R-T4	
IC104	8-759-584-35	IC F712504CPM-TEB	
IC162	8-759-338-95	IC NJM2903V(TE2)	
IC201	8-752-075-31	IC CXA2012R-T4	
IC251	8-759-578-34	IC MB87F4090PFF-G-BND	
IC253	8-759-447-77	IC TC7WH74FU(TE12R)	
IC254	8-759-243-19	IC TC7SU04F(TE85R)	
IC255	8-759-497-44	IC TC7WH125FU(TE12R)	
IC256	8-759-497-44	IC TC7WH125FU(TE12R)	
IC291	8-759-169-02	IC MB88344BPFV-G-BND-ER	(410/510)
IC291	8-759-536-93	IC M62371GP-600D	(410E/510E)
IC301	8-759-584-36	IC HG73C050BPTL	
IC302	8-752-397-36	IC CXD3129GA-T6	

VC-213

Ref. No.	Part No.	Description	Remarks
IC303	8-752-397-37	IC CXD3200GA-T6 (410/510)	
IC303	8-759-535-43	IC SN104266GGM-TEB (410E/510E)	
IC351	8-759-584-66	IC M65511AWG-600D	
IC352	8-759-583-86	IC MB90097PFV-G-123-BND-ER	
IC401	8-759-591-59	IC MB91191RPFF-G-140-BND-ER	
IC402	8-759-445-94	IC AK6480AM-E2	
IC451	8-759-327-67	IC LB1950V-TLM	
IC452	8-759-327-61	IC LB8112V-TLM (410/510)	
IC452	8-759-327-62	IC TA8482FN-EL (410E/510E)	
IC453	8-759-338-95	IC NJM2903V(TE2)	
IC501	8-752-386-72	IC CXD2444R-T4	
IC502	8-759-570-81	IC AD9808AJSTRL	
IC503	8-752-395-74	IC CXD3145R-T6 (410E/510E)	
IC551	8-759-475-79	IC uPD16833AG3-E2 (410E/510E)	
IC551	8-759-492-31	IC MPC17A134VMEL (410/510)	
IC552	8-759-444-87	IC NJM324V(TE2)	
IC601	8-759-579-81	IC SC371053AFTAEB	
IC641	8-759-576-28	IC NJM2533V(TE2)	
IC642	8-759-576-28	IC NJM2533V(TE2)	
IC643	8-759-534-25	IC AN2222FBQ-EB	
IC644	8-759-498-52	IC LA9511W-TBM	
IC701	8-759-583-66	IC AN2902FHQBEB	
IC702	8-759-566-19	IC AK4518-VF-E2	
IC760	8-752-089-62	IC CXA2087R-T6 (410E/510E)	
IC760	8-759-529-58	IC AN2982FH-A-EB (410/510)	
IC801	8-759-591-38	IC S579605PZ-TEB	
IC802	8-759-424-79	IC S-8423YFS-T2	
IC803	8-759-536-72	IC TL1596CPWR	
IC901	8-759-445-94	IC AK6480AM-E2	
IC902	8-759-588-77	IC MB91191RPFF-G-136-BND-ER	
		< COIL >	
L103	1-414-754-11	INDUCTOR 10uH	
L104	1-414-754-11	INDUCTOR 10uH	
L105	1-414-754-11	INDUCTOR 10uH	
L106	1-412-066-21	INDUCTOR CHIP 220uH	
L107	1-412-952-11	INDUCTOR 12uH	
L162	1-414-754-11	INDUCTOR 10uH	
L163	1-412-960-21	INDUCTOR 56uH	
L201	1-412-066-21	INDUCTOR CHIP 220uH	
L202	1-412-957-11	INDUCTOR 33uH	
L204	1-412-280-31	INDUCTOR 330uH	
L205	1-410-657-21	INDUCTOR CHIP 180uH	
L206	1-412-956-21	INDUCTOR 27uH	
L208	1-412-951-11	INDUCTOR 10uH	
L209	1-412-279-31	INDUCTOR 270uH	
L211	1-414-754-11	INDUCTOR 10uH	
L212	1-414-080-11	INDUCTOR 22uH	
L251	1-414-754-11	INDUCTOR 10uH	
L252	1-414-754-11	INDUCTOR 10uH	
L253	1-414-754-11	INDUCTOR 10uH	
L254	1-414-754-11	INDUCTOR 10uH	
L255	1-414-754-11	INDUCTOR 10uH	
L256	1-412-955-11	INDUCTOR 22uH	
L257	1-412-945-11	INDUCTOR 3.3uH	
L258	1-414-406-11	INDUCTOR 220uH	
L291	1-414-754-11	INDUCTOR 10uH	
L301	1-414-245-11	INDUCTOR 1.5uH	
L351	1-414-754-11	INDUCTOR 10uH	
L352	1-414-755-11	INDUCTOR 22uH	
L502	1-414-398-11	INDUCTOR 10uH	
L503	1-414-754-11	INDUCTOR 10uH (410E/510E)	
L551	1-414-754-11	INDUCTOR 10uH	
L552	1-414-398-11	INDUCTOR 10uH	
L553	1-414-754-11	INDUCTOR 10uH	
L601	1-414-754-11	INDUCTOR 10uH	
L602	1-414-754-11	INDUCTOR 10uH	
L603	1-412-948-11	INDUCTOR 5.6uH	
L604	1-412-942-21	INDUCTOR 1.8uH	
L605	1-412-948-11	INDUCTOR 5.6uH	
L606	1-412-950-11	INDUCTOR 8.2uH	
L607	1-412-950-11	INDUCTOR 8.2uH	
L641	1-414-754-11	INDUCTOR 10uH	
L642	1-414-754-11	INDUCTOR 10uH	
L643	1-412-957-11	INDUCTOR 33uH	
L644	1-412-957-11	INDUCTOR 33uH	
L645	1-412-948-11	INDUCTOR 5.6uH	
L701	1-414-754-11	INDUCTOR 10uH	
L702	1-414-754-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q101	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q102	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q103	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q104	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q105	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q106	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q107	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q108	8-729-047-19	TRANSISTOR 2SA1965-S-TL	
Q109	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q110	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q111	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q112	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q113	8-729-047-19	TRANSISTOR 2SA1965-S-TL	
Q114	8-729-047-19	TRANSISTOR 2SA1965-S-TL	
Q115	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q166	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q167	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q170	8-729-402-81	TRANSISTOR XN4501-TW	
Q201	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q202	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q203	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q204	8-729-037-89	TRANSISTOR 2SC4627J-C(K8).S0	
Q205	8-729-047-19	TRANSISTOR 2SA1965-S-TL	
Q206	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q208	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q209	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q210	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q213	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q214	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q215	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q216	8-729-230-72	TRANSISTOR 2SA1362-YG-EL	
Q217	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q218	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q251	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q252	8-729-042-29	TRANSISTOR RN1104F(TPL3)	

Ref. No.	Part No.	Description	Remarks
Q253	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q254	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q255	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q351	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q352	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q353	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q354	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q355	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q356	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q452	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q453	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q454	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q455	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q456	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q457	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q551	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q552	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q553	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q554	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q601	8-729-807-86	TRANSISTOR 2SB1295-UL5/6-TB	
Q602	8-729-037-76	TRANSISTOR RN1111F(TPL3)	
Q603	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q604	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q605	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q606	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q607	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q608	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q609	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q610	8-729-807-86	TRANSISTOR 2SB1295-UL5/6-TB	
Q641	8-729-040-77	TRANSISTOR 2SC5376-B(TE85L)	
Q642	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q643	8-729-040-77	TRANSISTOR 2SC5376-B(TE85L)	
Q644	8-729-040-77	TRANSISTOR 2SC5376-B(TE85L)	
Q645	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q646	8-729-122-63	TRANSISTOR 2SA1226-T1E3E4	
Q647	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q701	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q702	8-729-037-71	TRANSISTOR UN9210J-(K8).SO	
Q703	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q704	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q705	8-729-037-71	TRANSISTOR UN9210J-(K8).SO	
Q706	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q707	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q708	8-729-037-63	TRANSISTOR UN9115J-(K8).SO	
Q709	8-729-037-63	TRANSISTOR UN9115J-(K8).SO	
Q710	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q711	8-729-024-39	TRANSISTOR 2SD1511-R/S(TX)	
Q801	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q802	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q803	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q804	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q805	8-729-041-43	TRANSISTOR HN1L02FU(TE85R)	
Q806	8-729-042-58	TRANSISTOR UN9111J-(K8).SO	
Q807	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q808	8-729-042-29	TRANSISTOR RN1104F(TPL3)	
Q951	8-729-042-29	TRANSISTOR RN1104F(TPL3)	

Ref. No.	Part No.	Description				Remarks
		< RESISTOR >				
R101	1-218-990-11	SHORT	0			
R102	1-218-931-11	RES,CHIP		15	5%	1/16W
R104	1-218-990-11	SHORT	0			
R106	1-218-977-11	RES,CHIP		100K	5%	1/16W
R107	1-218-990-11	SHORT	0			
R108	1-218-990-11	SHORT	0			
R109	1-218-990-11	SHORT	0			
R110	1-218-990-11	SHORT	0			
R111	1-218-965-11	RES,CHIP		10K	5%	1/16W
R112	1-218-962-11	RES,CHIP		5.6K	5%	1/16W
R113	1-218-990-11	SHORT	0			
R114	1-218-979-11	RES,CHIP		150K	5%	1/16W
R115	1-218-989-11	RES,CHIP		1M	5%	1/16W
R116	1-218-966-11	RES,CHIP		12K	5%	1/16W
R117	1-218-965-11	RES,CHIP		10K	5%	1/16W
R118	1-218-949-11	RES,CHIP		470	5%	1/16W
R119	1-218-939-11	RES,CHIP		68	5%	1/16W
R120	1-218-966-11	RES,CHIP		12K	5%	1/16W
R121	1-218-961-11	RES,CHIP		4.7K	5%	1/16W
R122	1-218-965-11	RES,CHIP		10K	5%	1/16W
R123	1-218-990-11	SHORT	0			
R124	1-218-969-11	RES,CHIP		22K	5%	1/16W
R125	1-220-195-11	RES,CHIP		11K	5%	1/16W
R126	1-218-969-11	RES,CHIP		22K	5%	1/16W
R127	1-208-715-11	RES,CHIP		22K	0.50%	1/16W
R128	1-218-969-11	RES,CHIP		22K	5%	1/16W
R129	1-218-969-11	RES,CHIP		22K	5%	1/16W
R130	1-218-973-11	RES,CHIP		47K	5%	1/16W
R131	1-218-974-11	RES,CHIP		56K	5%	1/16W
R132	1-218-969-11	RES,CHIP		22K	5%	1/16W
R133	1-218-971-11	RES,CHIP		33K	5%	1/16W
R134	1-218-945-11	RES,CHIP		220	5%	1/16W
R135	1-218-946-11	RES,CHIP		270	5%	1/16W
R136	1-218-945-11	RES,CHIP		220	5%	1/16W
R137	1-218-945-11	RES,CHIP		220	5%	1/16W
R138	1-218-945-11	RES,CHIP		220	5%	1/16W
R139	1-218-945-11	RES,CHIP		220	5%	1/16W
R140	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R141	1-218-961-11	RES,CHIP		4.7K	5%	1/16W
R142	1-218-990-11	SHORT	0			
R143	1-218-941-11	RES,CHIP		100	5%	1/16W
R144	1-218-938-11	RES,CHIP		56	5%	1/16W
R145	1-218-950-11	RES,CHIP		560	5%	1/16W
R146	1-218-960-11	RES,CHIP		3.9K	5%	1/16W
R147	1-218-960-11	RES,CHIP		3.9K	5%	1/16W
R148	1-218-965-11	RES,CHIP		10K	5%	1/16W
R149	1-218-965-11	RES,CHIP		10K	5%	1/16W
R150	1-218-965-11	RES,CHIP		10K	5%	1/16W
R151	1-218-960-11	RES,CHIP		3.9K	5%	1/16W
R152	1-218-960-11	RES,CHIP		3.9K	5%	1/16W
R176	1-218-965-11	RES,CHIP		10K	5%	1/16W
R177	1-218-975-11	RES,CHIP		68K	5%	1/16W
R178	1-218-965-11	RES,CHIP		10K	5%	1/16W
R179	1-218-960-11	RES,CHIP		3.9K	5%	1/16W
R180	1-218-940-11	RES,CHIP		82	5%	1/16W

VC-213

Ref. No.	Part No.	Description			Remarks
R181	1-218-948-11	RES,CHIP	390	5%	1/16W
R182	1-218-974-11	RES,CHIP	56K	5%	1/16W
R183	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R184	1-218-975-11	RES,CHIP	68K	5%	1/16W
R185	1-218-969-11	RES,CHIP	22K	5%	1/16W
R186	1-218-977-11	RES,CHIP	100K	5%	1/16W
R187	1-218-977-11	RES,CHIP	100K	5%	1/16W
R188	1-218-968-11	RES,CHIP	18K	5%	1/16W
R189	1-218-986-11	RES,CHIP	560K	5%	1/16W
R190	1-218-981-11	RES,CHIP	220K	5%	1/16W
R191	1-218-985-11	RES,CHIP	470K	5%	1/16W
R192	1-218-965-11	RES,CHIP	10K	5%	1/16W
R195	1-218-969-11	RES,CHIP	22K	5%	1/16W
R201	1-208-677-11	RES,CHIP	560	0.50%	1/16W
R202	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R203	1-218-965-11	RES,CHIP	10K	5%	1/16W
R204	1-218-969-11	RES,CHIP	22K	5%	1/16W
R207	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R208	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R209	1-218-949-11	RES,CHIP	470	5%	1/16W
R210	1-218-990-11	SHORT	0		
R211	1-218-949-11	RES,CHIP	470	5%	1/16W
R212	1-208-707-11	RES,CHIP	10K	0.50%	1/16W
R214	1-218-948-11	RES,CHIP	390	5%	1/16W
R215	1-218-947-11	RES,CHIP	330	5%	1/16W
R216	1-218-947-11	RES,CHIP	330	5%	1/16W
R217	1-218-985-11	RES,CHIP	470K	5%	1/16W
R219	1-218-945-11	RES,CHIP	220	5%	1/16W
R220	1-218-965-11	RES,CHIP	10K	5%	1/16W
R221	1-218-952-11	RES,CHIP	820	5%	1/16W
R222	1-218-953-11	RES,CHIP	1K	5%	1/16W
R226	1-218-985-11	RES,CHIP	470K	5%	1/16W
R227	1-218-947-11	RES,CHIP	330	5%	1/16W
R228	1-218-965-11	RES,CHIP	10K	5%	1/16W
R231	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R232	1-218-971-11	RES,CHIP	33K	5%	1/16W
R233	1-218-953-11	RES,CHIP	1K	5%	1/16W
R234	1-218-950-11	RES,CHIP	560	5%	1/16W
R235	1-218-960-11	RES,CHIP	3.9K	5%	1/16W
R236	1-218-951-11	RES,CHIP	680	5%	1/16W
R237	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R239	1-218-965-11	RES,CHIP	10K	5%	1/16W
R240	1-218-958-11	RES,CHIP	2.7K	5%	1/16W
R241	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R242	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R243	1-218-965-11	RES,CHIP	10K	5%	1/16W
R251	1-218-965-11	RES,CHIP	10K	5%	1/16W
R252	1-218-977-11	RES,CHIP	100K	5%	1/16W
R253	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R254	1-218-965-11	RES,CHIP	10K	5%	1/16W
R255	1-218-954-11	RES,CHIP	1.2K	5%	1/16W
R256	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R257	1-218-962-11	RES,CHIP	5.6K	5%	1/16W
R258	1-218-953-11	RES,CHIP	1K	5%	1/16W
R259	1-218-963-11	RES,CHIP	6.8K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R260	1-218-954-11	RES,CHIP	1.2K	5%	1/16W
R261	1-218-943-11	RES,CHIP	150	5%	1/16W
R262	1-218-949-11	RES,CHIP	470	5%	1/16W
R263	1-218-941-11	RES,CHIP	100	5%	1/16W
R264	1-218-943-11	RES,CHIP	150	5%	1/16W
R265	1-218-972-11	RES,CHIP	39K	5%	1/16W
R266	1-218-952-11	RES,CHIP	820	5%	1/16W
R267	1-218-977-11	RES,CHIP	100K	5%	1/16W
R268	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R269	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R270	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R272	1-218-989-11	RES,CHIP	1M	5%	1/16W
R274	1-218-967-11	RES,CHIP	15K	5%	1/16W
R275	1-218-977-11	RES,CHIP	100K	5%	1/16W
R277	1-218-967-11	RES,CHIP	15K	5%	1/16W
R278	1-218-965-11	RES,CHIP	10K	5%	1/16W
R279	1-218-953-11	RES,CHIP	1K	5%	1/16W
R280	1-218-977-11	RES,CHIP	100K	5%	1/16W
R281	1-218-977-11	RES,CHIP	100K	5%	1/16W
R282	1-218-941-11	RES,CHIP	100	5%	1/16W
R283	1-218-990-11	SHORT	0		
R284	1-218-989-11	RES,CHIP	1M	5%	1/16W
R285	1-218-985-11	RES,CHIP	470K	5%	1/16W
R286	1-218-990-11	SHORT	0		
R288	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R289	1-218-946-11	RES,CHIP	270	5%	1/16W
R291	1-218-990-11	SHORT	0		
R301	1-218-937-11	RES,CHIP	47	5%	1/16W
R302	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R303	1-218-947-11	RES,CHIP	330	5%	1/16W
R304	1-218-965-11	RES,CHIP	10K	5%	1/16W
R305	1-218-965-11	RES,CHIP	10K	5%	1/16W
R306	1-218-990-11	SHORT	0		
R307	1-218-947-11	RES,CHIP	330	5%	1/16W
R308	1-218-990-11	SHORT	0		
R309	1-218-990-11	SHORT	0		
R310	1-218-990-11	SHORT	0 (410E/510E)		
R311	1-218-990-11	SHORT	0		
R312	1-218-990-11	SHORT	0 (410/510)		
R313	1-218-990-11	SHORT	0 (410E/510E)		
R314	1-218-990-11	SHORT	0 (410/510)		
R315	1-218-990-11	SHORT	0		
R317	1-218-990-11	SHORT	0 (410/510)		
R318	1-218-990-11	SHORT	0 (410E/510E)		
R319	1-218-990-11	SHORT	0 (410/510)		
R320	1-218-990-11	SHORT	0 (410/510)		
R321	1-218-990-11	SHORT	0		
R322	1-218-990-11	SHORT	0 (410E/510E)		
R323	1-218-990-11	SHORT	0 (410E/510E)		
R324	1-218-990-11	SHORT	0 (410E/510E)		
R325	1-218-990-11	SHORT	0 (410/510)		
R326	1-218-990-11	SHORT	0 (410/510)		
R327	1-218-849-11	RES,CHIP	1.2K	0.50%	1/16W (410/510)
R328	1-218-849-11	RES,CHIP	1.2K	0.50%	1/16W (410/510)
R329	1-218-990-11	SHORT	0 (410/510)		

Ref. No.	Part No.	Description				Remarks
R330	1-208-709-11	RES,CHIP	12K	0.50%	1/16W	(410E/510E)
R331	1-208-703-11	RES,CHIP	6.8K	0.50%	1/16W	(410/510)
R331	1-218-990-11	SHORT	0			(410E/510E)
R332	1-218-990-11	SHORT	0			(410E/510E)
R333	1-208-709-11	RES,CHIP	12K	0.50%	1/16W	(410E/510E)
R333	1-218-990-11	SHORT	0			(410/510)
R334	1-218-990-11	SHORT	0			(410/510)
R335	1-218-990-11	SHORT	0			(410/510)
R336	1-218-938-11	RES,CHIP	56	5%	1/16W	
R337	1-218-938-11	RES,CHIP	56	5%	1/16W	
R338	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R339	1-218-938-11	RES,CHIP	56	5%	1/16W	
R340	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R341	1-218-938-11	RES,CHIP	56	5%	1/16W	
R342	1-218-990-11	SHORT	0			
R343	1-216-864-11	METAL CHIP	0	5%	1/16W	
R352	1-218-990-11	SHORT	0			
R354	1-218-990-11	SHORT	0			
R357	1-218-990-11	SHORT	0			
R358	1-218-990-11	SHORT	0			
R359	1-218-990-11	SHORT	0			
R360	1-218-955-11	RES,CHIP	1.5K	5%	1/16W	
R361	1-218-959-11	RES,CHIP	3.3K	5%	1/16W	
R362	1-218-959-11	RES,CHIP	3.3K	5%	1/16W	
R363	1-218-949-11	RES,CHIP	470	5%	1/16W	
R364	1-218-949-11	RES,CHIP	470	5%	1/16W	
R365	1-218-951-11	RES,CHIP	680	5%	1/16W	
R366	1-218-952-11	RES,CHIP	820	5%	1/16W	
R367	1-218-951-11	RES,CHIP	680	5%	1/16W	
R368	1-218-947-11	RES,CHIP	330	5%	1/16W	
R369	1-218-953-11	RES,CHIP	1K	5%	1/16W	
R370	1-218-953-11	RES,CHIP	1K	5%	1/16W	
R371	1-218-961-11	RES,CHIP	4.7K	5%	1/16W	
R372	1-218-953-11	RES,CHIP	1K	5%	1/16W	
R373	1-218-957-11	RES,CHIP	2.2K	5%	1/16W	
R374	1-218-957-11	RES,CHIP	2.2K	5%	1/16W	
R375	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R376	1-218-953-11	RES,CHIP	1K	5%	1/16W	
R401	1-218-985-11	RES,CHIP	470K	5%	1/16W	
R402	1-218-985-11	RES,CHIP	470K	5%	1/16W	
R403	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R404	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R405	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R406	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R407	1-218-953-11	RES,CHIP	1K	5%	1/16W	
R408	1-218-953-11	RES,CHIP	1K	5%	1/16W	
R409	1-218-990-11	SHORT	0			
R411	1-218-990-11	SHORT	0			
R413	1-218-985-11	RES,CHIP	470K	5%	1/16W	
R414	1-218-971-11	RES,CHIP	33K	5%	1/16W	
R416	1-218-953-11	RES,CHIP	1K	5%	1/16W	
R417	1-218-961-11	RES,CHIP	4.7K	5%	1/16W	
R418	1-218-990-11	SHORT	0			
R419	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R422	1-218-990-11	SHORT	0			
R423	1-218-990-11	SHORT	0			
R424	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R425	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R426	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R427	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R428	1-218-985-11	RES,CHIP	470K	5%	1/16W	
R429	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R430	1-218-943-11	RES,CHIP	150	5%	1/16W	
R431	1-218-945-11	RES,CHIP	220	5%	1/16W	
R432	1-218-943-11	RES,CHIP	150	5%	1/16W	
R433	1-218-945-11	RES,CHIP	220	5%	1/16W	
R441	1-218-967-11	RES,CHIP	15K	5%	1/16W	(410/510)
R441	1-218-973-11	RES,CHIP	47K	5%	1/16W	(410E/510E)
R442	1-218-990-11	SHORT	0			
R443	1-218-871-11	RES,CHIP	10K	0.50%	1/16W	
R444	1-218-990-11	SHORT	0			
R451	1-217-671-11	METAL CHIP	1	5%	1/10W	
R452	1-217-671-11	METAL CHIP	1	5%	1/10W	
R453	1-217-671-11	METAL CHIP	1	5%	1/10W	
R454	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R455	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R456	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R457	1-218-990-11	SHORT	0			
R458	1-218-985-11	RES,CHIP	470K	5%	1/16W	
R459	1-218-985-11	RES,CHIP	470K	5%	1/16W	
R460	1-218-985-11	RES,CHIP	470K	5%	1/16W	
R461	1-218-983-11	RES,CHIP	330K	5%	1/16W	
R462	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R463	1-218-973-11	RES,CHIP	47K	5%	1/16W	
R464	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R465	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R466	1-218-973-11	RES,CHIP	47K	5%	1/16W	
R467	1-218-961-11	RES,CHIP	4.7K	5%	1/16W	
R468	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R470	1-218-973-11	RES,CHIP	47K	5%	1/16W	
R471	1-218-946-11	RES,CHIP	270	5%	1/16W	
R472	1-218-968-11	RES,CHIP	18K	5%	1/16W	
R473	1-218-949-11	RES,CHIP	470	5%	1/16W	
R474	1-218-964-11	RES,CHIP	8.2K	5%	1/16W	(410E/510E)
R474	1-218-966-11	RES,CHIP	12K	5%	1/16W	(410/510)
R475	1-218-968-11	RES,CHIP	18K	5%	1/16W	
R476	1-217-671-11	METAL CHIP	1	5%	1/10W	
R477	1-217-671-11	METAL CHIP	1	5%	1/10W	
R478	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R479	1-218-959-11	RES,CHIP	3.3K	5%	1/16W	
R480	1-218-961-11	RES,CHIP	4.7K	5%	1/16W	
R481	1-216-023-00	METAL CHIP	82	5%	1/10W	
R482	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R483	1-218-977-11	RES,CHIP	100K	5%	1/16W	
R484	1-218-961-11	RES,CHIP	4.7K	5%	1/16W	
R485	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R486	1-218-965-11	RES,CHIP	10K	5%	1/16W	
R487	1-218-981-11	RES,CHIP	220K	5%	1/16W	
R488	1-218-981-11	RES,CHIP	220K	5%	1/16W	
R489	1-218-965-11	RES,CHIP	10K	5%	1/16W	

VC-213

Ref. No.	Part No.	Description			Remarks
R490	1-218-965-11	RES,CHIP	10K	5%	1/16W
R492	1-218-965-11	RES,CHIP	10K	5%	1/16W
R493	1-218-977-11	RES,CHIP	100K	5%	1/16W
R494	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R497	1-218-977-11	RES,CHIP	100K	5%	1/16W
R498	1-218-990-11	SHORT	0		
R499	1-218-990-11	SHORT	0		
R501	1-216-864-11	METAL CHIP	0	5%	1/16W
R502	1-216-864-11	METAL CHIP	0	5%	1/16W
R503	1-218-977-11	RES,CHIP	100K	5%	1/16W
R504	1-218-990-11	SHORT	0		
R505	1-218-941-11	RES,CHIP	100	5%	1/16W
R506	1-218-941-11	RES,CHIP	100	5%	1/16W
R507	1-218-989-11	RES,CHIP	1M	5%	1/16W
R509	1-218-990-11	SHORT	0		
R511	1-218-990-11	SHORT	0		
R512	1-218-985-11	RES,CHIP	470K	5%	1/16W
R513	1-218-990-11	SHORT	0		
R514	1-218-990-11	SHORT	0		
R515	1-218-990-11	SHORT	0		
R519	1-216-864-11	METAL CHIP	0	5%	1/16W
R520	1-218-990-11	SHORT	0 (410/510)		
R521	1-218-990-11	SHORT	0		
R523	1-218-933-11	RES,CHIP	22	5%	1/16W (410E/510E)
R525	1-218-990-11	SHORT	0 (410/510)		
R526	1-218-990-11	SHORT	0 (410/510)		
R530	1-218-990-11	SHORT	0 (410/510)		
R531	1-218-990-11	SHORT	0 (410/510)		
R532	1-218-990-11	SHORT	0 (410/510)		
R533	1-218-990-11	SHORT	0 (410/510)		
R534	1-218-990-11	SHORT	0 (410/510)		
R535	1-218-990-11	SHORT	0 (410/510)		
R536	1-218-990-11	SHORT	0 (410/510)		
R537	1-218-990-11	SHORT	0 (410/510)		
R538	1-218-990-11	SHORT	0 (410/510)		
R539	1-218-990-11	SHORT	0 (410/510)		
R540	1-218-990-11	SHORT	0 (410/510)		
R541	1-218-990-11	SHORT	0 (410/510)		
R542	1-218-990-11	SHORT	0 (410/510)		
R543	1-218-990-11	SHORT	0 (410E/510E)		
R544	1-218-990-11	SHORT	0		
R546	1-218-990-11	SHORT	0 (410/510)		
R547	1-218-941-11	RES,CHIP	100	5%	1/16W (410E/510E)
R548	1-218-941-11	RES,CHIP	100	5%	1/16W (410E/510E)
R549	1-216-864-11	METAL CHIP	0	5%	1/16W
R552	1-216-295-91	SHORT	0		
R553	1-218-953-11	RES,CHIP	1K	5%	1/16W
R554	1-218-929-11	RES,CHIP	10	5%	1/16W
R555	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R556	1-218-965-11	RES,CHIP	10K	5%	1/16W
R557	1-218-981-11	RES,CHIP	220K	5%	1/16W
R558	1-218-985-11	RES,CHIP	470K	5%	1/16W
R559	1-218-985-11	RES,CHIP	470K	5%	1/16W
R560	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R561	1-218-967-11	RES,CHIP	15K	5%	1/16W
R562	1-218-985-11	RES,CHIP	470K	5%	1/16W
R563	1-218-953-11	RES,CHIP	1K	5%	1/16W
R564	1-218-953-11	RES,CHIP	1K	5%	1/16W
R565	1-218-947-11	RES,CHIP	330	5%	1/16W
R566	1-218-953-11	RES,CHIP	1K	5%	1/16W
R567	1-218-989-11	RES,CHIP	1M	5%	1/16W
R568	1-218-965-11	RES,CHIP	10K	5%	1/16W
R569	1-218-969-11	RES,CHIP	22K	5%	1/16W
R570	1-218-969-11	RES,CHIP	22K	5%	1/16W
R571	1-218-973-11	RES,CHIP	47K	5%	1/16W
R572	1-218-975-11	RES,CHIP	68K	5%	1/16W
R573	1-218-975-11	RES,CHIP	68K	5%	1/16W
R574	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R575	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R576	1-218-973-11	RES,CHIP	47K	5%	1/16W
R577	1-218-953-11	RES,CHIP	1K	5%	1/16W
R601	1-218-973-11	RES,CHIP	47K	5%	1/16W
R602	1-218-965-11	RES,CHIP	10K	5%	1/16W
R603	1-218-953-11	RES,CHIP	1K	5%	1/16W
R604	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R605	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R607	1-218-979-11	RES,CHIP	150K	5%	1/16W
R608	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R609	1-218-965-11	RES,CHIP	10K	5%	1/16W
R610	1-218-953-11	RES,CHIP	1K	5%	1/16W
R611	1-218-941-11	RES,CHIP	100	5%	1/16W
R612	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R613	1-218-977-11	RES,CHIP	100K	5%	1/16W
R614	1-218-989-11	RES,CHIP	1M	5%	1/16W
R615	1-218-977-11	RES,CHIP	100K	5%	1/16W
R616	1-218-977-11	RES,CHIP	100K	5%	1/16W
R617	1-218-965-11	RES,CHIP	10K	5%	1/16W
R618	1-218-965-11	RES,CHIP	10K	5%	1/16W
R619	1-218-977-11	RES,CHIP	100K	5%	1/16W
R620	1-218-950-11	RES,CHIP	560	5%	1/16W
R621	1-218-990-11	SHORT	0		
R623	1-218-952-11	RES,CHIP	820	5%	1/16W
R624	1-218-965-11	RES,CHIP	10K	5%	1/16W
R625	1-218-944-11	RES,CHIP	180	5%	1/16W
R626	1-218-944-11	RES,CHIP	180	5%	1/16W
R641	1-218-973-11	RES,CHIP	47K	5%	1/16W
R642	1-218-973-11	RES,CHIP	47K	5%	1/16W
R643	1-218-969-11	RES,CHIP	22K	5%	1/16W
R644	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R645	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R646	1-218-965-11	RES,CHIP	10K	5%	1/16W
R647	1-218-967-11	RES,CHIP	15K	5%	1/16W
R648	1-218-965-11	RES,CHIP	10K	5%	1/16W
R650	1-218-989-11	RES,CHIP	1M	5%	1/16W
R651	1-218-969-11	RES,CHIP	22K	5%	1/16W
R652	1-218-953-11	RES,CHIP	1K	5%	1/16W
R653	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R654	1-218-947-11	RES,CHIP	330	5%	1/16W
R655	1-218-953-11	RES,CHIP	1K	5%	1/16W
R656	1-218-953-11	RES,CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R657	1-218-949-11	RES,CHIP	470	5%	1/16W
R659	1-218-965-11	RES,CHIP	10K	5%	1/16W
R660	1-218-979-11	RES,CHIP	150K	5%	1/16W
R661	1-218-979-11	RES,CHIP	150K	5%	1/16W
R662	1-218-969-11	RES,CHIP	22K	5%	1/16W
R663	1-218-953-11	RES,CHIP	1K	5%	1/16W
R664	1-218-950-11	RES,CHIP	560	5%	1/16W
R665	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R666	1-218-953-11	RES,CHIP	1K	5%	1/16W
R667	1-218-965-11	RES,CHIP	10K	5%	1/16W
R668	1-218-949-11	RES,CHIP	470	5%	1/16W
R669	1-218-972-11	RES,CHIP	39K	5%	1/16W
R670	1-218-965-11	RES,CHIP	10K	5%	1/16W
R671	1-218-949-11	RES,CHIP	470	5%	1/16W
R672	1-218-965-11	RES,CHIP	10K	5%	1/16W
R673	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R674	1-218-935-11	RES,CHIP	33	5%	1/16W
R675	1-218-935-11	RES,CHIP	33	5%	1/16W
R676	1-218-935-11	RES,CHIP	33	5%	1/16W
R677	1-218-935-11	RES,CHIP	33	5%	1/16W
R678	1-218-935-11	RES,CHIP	33	5%	1/16W
R679	1-218-935-11	RES,CHIP	33	5%	1/16W
R680	1-218-949-11	RES,CHIP	470	5%	1/16W
R681	1-218-981-11	RES,CHIP	220K	5%	1/16W
R682	1-218-941-11	RES,CHIP	100	5%	1/16W
R684	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R685	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R686	1-218-989-11	RES,CHIP	1M	5%	1/16W
R687	1-218-937-11	RES,CHIP	47	5%	1/16W
R689	1-218-990-11	SHORT	0		
R701	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R702	1-218-969-11	RES,CHIP	22K	5%	1/16W
R703	1-218-969-11	RES,CHIP	22K	5%	1/16W
R704	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R705	1-218-973-11	RES,CHIP	47K	5%	1/16W
R706	1-218-936-11	RES,CHIP	39	5%	1/16W
R707	1-218-935-11	RES,CHIP	33	5%	1/16W
R708	1-218-973-11	RES,CHIP	47K	5%	1/16W
R709	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R710	1-218-936-11	RES,CHIP	39	5%	1/16W
R711	1-218-935-11	RES,CHIP	33	5%	1/16W
R712	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R713	1-218-953-11	RES,CHIP	1K	5%	1/16W
R714	1-218-965-11	RES,CHIP	10K	5%	1/16W
R715	1-218-965-11	RES,CHIP	10K	5%	1/16W
R716	1-218-953-11	RES,CHIP	1K	5%	1/16W
R717	1-218-973-11	RES,CHIP	47K	5%	1/16W
R718	1-218-973-11	RES,CHIP	47K	5%	1/16W
R719	1-218-965-11	RES,CHIP	10K	5%	1/16W
R720	1-218-965-11	RES,CHIP	10K	5%	1/16W
R721	1-218-973-11	RES,CHIP	47K	5%	1/16W
R722	1-218-953-11	RES,CHIP	1K	5%	1/16W
R724	1-218-953-11	RES,CHIP	1K	5%	1/16W
R725	1-218-969-11	RES,CHIP	22K	5%	1/16W
R726	1-218-969-11	RES,CHIP	22K	5%	1/16W
R727	1-218-953-11	RES,CHIP	1K	5%	1/16W
R728	1-218-949-11	RES,CHIP	470	5%	1/16W
R729	1-218-949-11	RES,CHIP	470	5%	1/16W
R731	1-218-949-11	RES,CHIP	470	5%	1/16W
R732	1-218-949-11	RES,CHIP	470	5%	1/16W
R734	1-218-971-11	RES,CHIP	33K	5%	1/16W
R735	1-218-960-11	RES,CHIP	3.9K	5%	1/16W
R760	1-218-990-11	SHORT	0 (410/510)		
R762	1-218-990-11	SHORT	0 (410/510)		
R763	1-218-977-11	RES,CHIP	100K	5%	1/16W (410/510)
R763	1-218-985-11	RES,CHIP	470K	5%	1/16W (410E/510E)
R764	1-218-977-11	RES,CHIP	100K	5%	1/16W (410/510)
R764	1-218-985-11	RES,CHIP	470K	5%	1/16W (410E/510E)
R765	1-218-990-11	SHORT	0 (410E/510E)		
R766	1-218-977-11	RES,CHIP	100K	5%	1/16W (410E/510E)
R766	1-218-978-11	RES,CHIP	120K	5%	1/16W (410/510)
R767	1-218-977-11	RES,CHIP	100K	5%	1/16W (410E/510E)
R767	1-218-978-11	RES,CHIP	120K	5%	1/16W (410/510)
R768	1-208-715-11	RES,CHIP	22K	0.50%	1/16W (410/510)
R769	1-208-935-11	RES,CHIP	100K	0.50%	1/16W (410E/510E)
R769	1-208-947-11	RES,CHIP	330K	0.50%	1/16W (410/510)
R770	1-218-952-11	RES,CHIP	820	5%	1/16W
R801	1-218-985-11	RES,CHIP	470K	5%	1/16W
R802	1-218-953-11	RES,CHIP	1K	5%	1/16W
R804	1-218-953-11	RES,CHIP	1K	5%	1/16W
R805	1-218-953-11	RES,CHIP	1K	5%	1/16W
R806	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R808	1-218-945-11	RES,CHIP	220	5%	1/16W
R809	1-218-977-11	RES,CHIP	100K	5%	1/16W
R810	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R811	1-218-973-11	RES,CHIP	47K	5%	1/16W
R812	1-218-977-11	RES,CHIP	100K	5%	1/16W
R813	1-218-985-11	RES,CHIP	470K	5%	1/16W
R814	1-218-985-11	RES,CHIP	470K	5%	1/16W
R815	1-218-985-11	RES,CHIP	470K	5%	1/16W
R816	1-218-985-11	RES,CHIP	470K	5%	1/16W
R817	1-218-985-11	RES,CHIP	470K	5%	1/16W
R818	1-218-985-11	RES,CHIP	470K	5%	1/16W
R819	1-218-985-11	RES,CHIP	470K	5%	1/16W
R820	1-218-973-11	RES,CHIP	47K	5%	1/16W
R821	1-218-977-11	RES,CHIP	100K	5%	1/16W
R822	1-218-985-11	RES,CHIP	470K	5%	1/16W
R823	1-218-965-11	RES,CHIP	10K	5%	1/16W
R824	1-218-958-11	RES,CHIP	2.7K	5%	1/16W
R825	1-218-953-11	RES,CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R826	1-218-953-11	RES,CHIP	1K	5%	1/16W
R827	1-218-953-11	RES,CHIP	1K	5%	1/16W
R828	1-218-953-11	RES,CHIP	1K	5%	1/16W
R829	1-218-953-11	RES,CHIP	1K	5%	1/16W
R830	1-218-953-11	RES,CHIP	1K	5%	1/16W
R831	1-218-953-11	RES,CHIP	1K	5%	1/16W
R832	1-218-985-11	RES,CHIP	470K	5%	1/16W
R833	1-218-989-11	RES,CHIP	1M	5%	1/16W
R834	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R835	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R836	1-218-985-11	RES,CHIP	470K	0.50%	1/16W
R837	1-218-985-11	RES,CHIP	470K	0.50%	1/16W
R838	1-218-977-11	RES,CHIP	100K	5%	1/16W
R839	1-218-977-11	RES,CHIP	100K	5%	1/16W
R840	1-218-977-11	RES,CHIP	100K	5%	1/16W
R843	1-218-953-11	RES,CHIP	1K	5%	1/16W
R844	1-218-953-11	RES,CHIP	1K	5%	1/16W
R845	1-218-953-11	RES,CHIP	1K	5%	1/16W
R846	1-218-953-11	RES,CHIP	1K	5%	1/16W
R847	1-218-953-11	RES,CHIP	1K	5%	1/16W
R848	1-218-977-11	RES,CHIP	100K	5%	1/16W
R849	1-218-953-11	RES,CHIP	1K	5%	1/16W
R850	1-218-953-11	RES,CHIP	1K	5%	1/16W
R851	1-218-953-11	RES,CHIP	1K	5%	1/16W
R852	1-218-989-11	RES,CHIP	1M	5%	1/16W
R853	1-218-989-11	RES,CHIP	1M	5%	1/16W
R854	1-218-989-11	RES,CHIP	1M	5%	1/16W
R855	1-218-989-11	RES,CHIP	1M	5%	1/16W
R856	1-218-989-11	RES,CHIP	1M	5%	1/16W
R857	1-218-989-11	RES,CHIP	1M	5%	1/16W
R858	1-218-989-11	RES,CHIP	1M	5%	1/16W
R859	1-218-953-11	RES,CHIP	1K	5%	1/16W
R860	1-218-989-11	RES,CHIP	1M	5%	1/16W
R861	1-218-953-11	RES,CHIP	1K	5%	1/16W
R862	1-218-989-11	RES,CHIP	1M	5%	1/16W
R863	1-218-989-11	RES,CHIP	1M	5%	1/16W
R864	1-218-953-11	RES,CHIP	1K	5%	1/16W
R865	1-218-953-11	RES,CHIP	1K	5%	1/16W
R866	1-218-973-11	RES,CHIP	47K	5%	1/16W
R867	1-218-985-11	RES,CHIP	470K	5%	1/16W
R868	1-218-985-11	RES,CHIP	470K	5%	1/16W
R869	1-218-985-11	RES,CHIP	470K	5%	1/16W
R870	1-218-985-11	RES,CHIP	470K	5%	1/16W
R871	1-218-985-11	RES,CHIP	470K	5%	1/16W
R872	1-218-989-11	RES,CHIP	1M	5%	1/16W
R873	1-218-953-11	RES,CHIP	1K	5%	1/16W
R874	1-218-953-11	RES,CHIP	1K	5%	1/16W
R875	1-218-953-11	RES,CHIP	1K	5%	1/16W
R876	1-219-570-11	RES,CHIP	10M	5%	1/16W
R877	1-218-985-11	RES,CHIP	470K	5%	1/16W
R878	1-218-985-11	RES,CHIP	470K	5%	1/16W
R879	1-218-977-11	RES,CHIP	100K	5%	1/16W
R880	1-218-977-11	RES,CHIP	100K	5%	1/16W
R881	1-218-977-11	RES,CHIP	100K	5%	1/16W
R882	1-218-985-11	RES,CHIP	470K	5%	1/16W
R883	1-218-949-11	RES,CHIP	470	5%	1/16W
R884	1-218-953-11	RES,CHIP	1K	5%	1/16W
R885	1-218-953-11	RES,CHIP	1K	5%	1/16W
R886	1-218-953-11	RES,CHIP	1K	5%	1/16W
R887	1-218-953-11	RES,CHIP	1K	5%	1/16W
R888	1-218-985-11	RES,CHIP	470K	5%	1/16W
R889	1-218-953-11	RES,CHIP	1K	5%	1/16W
R890	1-218-985-11	RES,CHIP	470K	5%	1/16W
R891	1-218-985-11	RES,CHIP	470K	5%	1/16W
R893	1-218-953-11	RES,CHIP	1K	5%	1/16W
R894	1-218-953-11	RES,CHIP	1K	5%	1/16W
R895	1-218-977-11	RES,CHIP	100K	5%	1/16W
R896	1-218-941-11	RES,CHIP	100	5%	1/16W
R901	1-218-953-11	RES,CHIP	1K	5%	1/16W
R902	1-218-977-11	RES,CHIP	100K	5%	1/16W
R903	1-218-977-11	RES,CHIP	100K	5%	1/16W
R904	1-218-977-11	RES,CHIP	100K	5%	1/16W
R905	1-218-977-11	RES,CHIP	100K	5%	1/16W
R906	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R907	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R908	1-218-969-11	RES,CHIP	22K	5%	1/16W
R909	1-218-969-11	RES,CHIP	22K	5%	1/16W
R910	1-218-977-11	RES,CHIP	100K	5%	1/16W
R911	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R912	1-218-965-11	RES,CHIP	10K	5%	1/16W
R913	1-218-965-11	RES,CHIP	10K	5%	1/16W
R914	1-218-977-11	RES,CHIP	100K	5%	1/16W
R915	1-218-973-11	RES,CHIP	47K	5%	1/16W
R916	1-218-977-11	RES,CHIP	100K	5%	1/16W
R917	1-218-977-11	RES,CHIP	100K	5%	1/16W
R918	1-218-985-11	RES,CHIP	470K	5%	1/16W
R919	1-218-985-11	RES,CHIP	470K	5%	1/16W
R920	1-218-973-11	RES,CHIP	47K	5%	1/16W
R921	1-218-973-11	RES,CHIP	47K	5%	1/16W
R922	1-218-973-11	RES,CHIP	47K	5%	1/16W
R923	1-218-943-11	RES,CHIP	150	5%	1/16W
R924	1-218-945-11	RES,CHIP	220	5%	1/16W
R930	1-218-990-11	SHORT	0		
R931	1-218-977-11	RES,CHIP	100K	5%	1/16W
R932	1-218-977-11	RES,CHIP	100K	5%	1/16W
R933	1-218-977-11	RES,CHIP	100K	5%	1/16W
R934	1-218-977-11	RES,CHIP	100K	5%	1/16W
R935	1-218-990-11	SHORT	0		
R951	1-218-990-11	SHORT	0 (410/410E)		
R952	1-218-990-11	SHORT	0 (410/410E)		
R953	1-218-990-11	SHORT	0 (410/410E)		
R954	1-218-990-11	SHORT	0 (410/410E)		
R955	1-218-990-11	SHORT	0 (410/410E)		
R956	1-218-990-11	SHORT	0 (410/410E)		
R957	1-218-990-11	SHORT	0 (410/410E)		
R958	1-218-990-11	SHORT	0 (410/410E)		
R959	1-218-990-11	SHORT	0 (410/410E)		
R960	1-218-990-11	SHORT	0 (410/410E)		
R961	1-218-990-11	SHORT	0 (410/410E)		
R962	1-218-990-11	SHORT	0 (410/410E)		

Ref. No.	Part No.	Description			Remarks
R963	1-218-990-11	SHORT	0 (410/410E)		
R964	1-218-990-11	SHORT	0 (410/410E)		
R965	1-218-990-11	SHORT	0 (410/410E)		
R966	1-218-990-11	SHORT	0 (410/410E)		
R967	1-218-990-11	SHORT	0 (410/410E)		
R968	1-218-990-11	SHORT	0 (410/410E)		
R969	1-218-990-11	SHORT	0 (410/410E)		
R970	1-218-990-11	SHORT	0		
R972	1-218-990-11	SHORT	0		
R974	1-218-953-11	RES,CHIP	1K	5%	1/16W
R975	1-218-965-11	RES,CHIP	10K	5%	1/16W
R976	1-218-977-11	RES,CHIP	100K	5%	1/16W
R977	1-218-973-11	RES,CHIP	47K	5%	1/16W (410)
R977	1-218-974-11	RES,CHIP	56K	5%	1/16W (410E)
R977	1-218-977-11	RES,CHIP	100K	5%	1/16W (510/510E)
R978	1-218-969-11	RES,CHIP	22K	5%	1/16W (510E)
R978	1-218-973-11	RES,CHIP	47K	5%	1/16W (510)
R978	1-218-975-11	RES,CHIP	68K	5%	1/16W (410E)
R978	1-218-977-11	RES,CHIP	100K	5%	1/16W (410)
R979	1-218-990-11	SHORT	0		(410/410E)
R980	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R981	1-218-953-11	RES,CHIP	1K	5%	1/16W
R982	1-218-953-11	RES,CHIP	1K	5%	1/16W
R983	1-217-671-11	METAL CHIP	1	5%	1/10W
R984	1-217-671-11	METAL CHIP	1	5%	1/10W
R985	1-218-990-11	SHORT	0		

< VIBRATOR >

Ref. No.	Part No.	Description
X251	1-760-320-11	VIBRATOR, CRYSTAL (28.6363MHz)(410/510)
X251	1-760-321-11	VIBRATOR, CRYSTAL (28.375MHz)(410E/510E)
X301	1-767-399-11	VIBRATOR, CRYSTAL (24.576MHz)
X501	1-767-400-11	VIBRATOR, CRYSTAL (36MHz)(410E/510E)
X501	1-767-586-21	VIBRATOR, CRYSTAL (27MHz)(410/510)
X601	1-781-309-21	VIBRATOR, CRYSTAL (40.5MHz)
X801	1-767-450-11	VIBRATOR, CERAMIC (20MHz)
X802	1-760-458-21	VIBRATOR, CRYSTAL (32.768KHz)
X901	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)

A-7073-876-A VF-126 BOARD, COMPLETE
****
(Ref.No.:10000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remarks
C4502	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4504	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C4505	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4508	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4509	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C4510	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C4511	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C4512	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4514	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C4515	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4516	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C4601	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4602	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C4603	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4604	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C4605	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C4606	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4607	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C4608	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C4609	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C4610	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4611	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4612	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C4613	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V
C4614	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C4615	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C4617	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C4618	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C4619	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C4620	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4621	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C4622	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4623	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C4626	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C4801	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4802	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C4803	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
⚠C4804	1-115-464-91	CERAMIC CHIP	0.0022uF	10%	630V

< CONNECTOR >

Ref. No.	Part No.	Description
CN4501	1-766-350-21	CONNECTOR, FFC/FPC 20P
CN4602	1-691-354-21	CONNECTOR, FFC/FPC (ZIF) 16P

< DIODE >

Ref. No.	Part No.	Description
D4601	8-713-102-80	DIODE 1T369-01-T8A
D4602	8-719-043-70	DIODE MA6S121-(TX)
⚠D4802	8-719-056-49	DIODE 1SS370(TE85L)

< IC >

Ref. No.	Part No.	Description
IC4501	8-759-546-65	IC CXA8115AR-T4
IC4502	8-759-364-05	IC M62376GP-65AD
IC4601	8-759-097-75	IC MB3789PFV-G-BND-ER
IC4602	8-752-392-33	IC CXD2458AR-T4
IC4603	8-759-580-26	IC NJM2130F(TE2)

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

VF-126

Ref. No.	Part No.	Description			Remarks
		< COIL >			
L4501	1-414-754-11	INDUCTOR 10uH			
L4502	1-414-756-11	INDUCTOR 47uH			
L4601	1-414-756-11	INDUCTOR 47uH			
L4602	1-414-756-11	INDUCTOR 47uH			
L4603	1-412-949-21	INDUCTOR 6.8uH			
L4801	1-412-031-11	INDUCTOR CHIP 47uH			
L4802	1-412-029-11	INDUCTOR CHIP 10uH			
		< FLOUORESCENT TUBE >			
⚠ND4801	1-517-414-71	FLUORESCENT TUBE (0.55 INCH)			
		< TRANSISTOR >			
Q4601	8-729-042-29	TRANSISTOR RN1104F(TPL3)			
Q4602	8-729-037-61	TRANSISTOR RN2104F(TPL3)			
Q4603	8-729-045-84	TRANSISTOR RN2105F(TPL3)			
⚠Q4801	8-729-039-24	TRANSISTOR FX216-TL1			
		< RESISTOR >			
R4501	1-216-864-11	METAL CHIP	0	5%	1/16W
R4503	1-216-837-11	METAL CHIP	22K	5%	1/16W
R4504	1-216-837-11	METAL CHIP	22K	5%	1/16W
R4505	1-216-839-11	METAL CHIP	33K	5%	1/16W
R4509	1-216-843-11	METAL CHIP	68K	5%	1/16W
R4510	1-216-839-11	METAL CHIP	33K	5%	1/16W
R4511	1-216-840-11	METAL CHIP	39K	5%	1/16W
R4512	1-216-853-11	METAL CHIP	470K	5%	1/16W
R4513	1-216-840-11	METAL CHIP	39K	5%	1/16W
R4514	1-216-843-11	METAL CHIP	68K	5%	1/16W
R4515	1-216-839-11	METAL CHIP	33K	5%	1/16W
R4516	1-216-841-11	METAL CHIP	47K	5%	1/16W
R4517	1-216-840-11	METAL CHIP	39K	5%	1/16W
R4518	1-216-809-11	METAL CHIP	100	5%	1/16W
R4519	1-216-809-11	METAL CHIP	100	5%	1/16W
R4521	1-216-809-11	METAL CHIP	100	5%	1/16W
R4524	1-218-907-11	RES,CHIP	330K	0.50%	1/16W
R4525	1-218-877-11	RES,CHIP	18K	0.50%	1/16W
R4602	1-216-840-11	METAL CHIP	39K	5%	1/16W
R4604	1-216-835-11	METAL CHIP	15K	5%	1/16W
R4605	1-216-833-91	RES,CHIP	10K	5%	1/16W
R4606	1-218-901-11	RES,CHIP	180K	0.50%	1/16W
R4607	1-216-839-11	METAL CHIP	33K	5%	1/16W
R4608	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R4609	1-216-864-11	METAL CHIP	0	5%	1/16W
R4610	1-216-821-11	METAL CHIP	1K	5%	1/16W
R4611	1-216-843-11	METAL CHIP	68K	5%	1/16W
R4612	1-216-842-11	METAL CHIP	56K	5%	1/16W
R4615	1-216-864-11	METAL CHIP	0	5%	1/16W
R4616	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R4617	1-216-843-11	METAL CHIP	68K	5%	1/16W
R4618	1-216-850-11	METAL CHIP	270K	5%	1/16W
R4619	1-216-864-11	METAL CHIP	0	5%	1/16W
R4620	1-216-838-11	METAL CHIP	27K	5%	1/16W
R4621	1-216-833-91	RES,CHIP	10K	5%	1/16W
R4622	1-216-847-11	METAL CHIP	150K	5%	1/16W
R4623	1-216-841-11	METAL CHIP	47K	5%	1/16W
R4624	1-216-848-11	METAL CHIP	180K	5%	1/16W
R4625	1-216-840-11	METAL CHIP	39K	5%	1/16W
R4626	1-216-851-11	METAL CHIP	330K	5%	1/16W
R4627	1-216-850-11	METAL CHIP	270K	5%	1/16W
R4629	1-216-837-11	METAL CHIP	22K	5%	1/16W
R4630	1-216-853-11	METAL CHIP	470K	5%	1/16W
R4634	1-216-809-11	METAL CHIP	100	5%	1/16W
R4635	1-216-841-11	METAL CHIP	47K	5%	1/16W
R4636	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4637	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4801	1-216-839-11	METAL CHIP	33K	5%	1/16W
		< TRANSISTOR >			
⚠T4801	1-426-848-51	TRANSFORMER, INVERTER			

MISCELLANEOUS

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Ref. No.	Part No.	Description
6	1-418-273-11	SWITCH BLOCK, CONTROL (MF-9500)
9	1-673-118-21	FP-76 FLEXIBLE BOARD
17	1-672-663-21	FP-49 FLEXIBLE BOARD
21	1-673-119-11	FP-77 FLEXIBLE BOARD
22	1-469-431-11	BEAD, FERRITE
51	1-418-274-11	SWITCH BLOCK, CONTROL (PS-9500)
53	1-469-431-11	BEAD, FERRITE (410E/510E)
54	1-783-240-11	CABLE, FLEXIBLE FLAT (FFC-236)
56	1-672-668-21	FP-62 FLEXIBLE BOARD
60	1-469-444-11	FILTER, EMI (510/510E)
61	1-673-160-21	FP-79 FLEXIBLE BOARD (510/510E)
82	1-959-833-11	HARNESS (EM-50) (510/510E)
108	1-673-161-21	FP-93 FLEXIBLE BOARD
115	1-959-311-11	HARNESS (DP-75)
117	1-668-963-21	FP-642 FLEXIBLE BOARD
165	1-475-619-11	SWITCH BLOCK, CONTROL (SS-8500)
170	1-469-364-11	FILTER, EMI (CS) (410E:AEP,UK/510E)
173	1-475-617-51	SWITCH BLOCK, CONTROL(FK-8500) (410E:AEP,UK/510E)
173	1-475-617-71	SWITCH BLOCK, CONTROL(FK-8500) (410/410E:E,HK,AUS,CN,JE/510)
175	1-469-431-11	BEAD, FERRITE
176	1-672-672-21	FP-45 FLEXIBLE BOARD
177	1-774-867-31	CONNECTOR,EXTERNAL (HOT SHOE) 8P
178	1-672-665-11	FP-54 FLEXIBLE BOARD
182	1-673-120-11	FP-78 FLEXIBLE BOARD
186	1-469-363-11	FILTER, EMI (MD)
211	1-672-662-11	FP-47 FLEXIBLE BOARD
220	1-758-155-21	FILTER BLOCK, OPTICAL (410E/510E)
220	1-758-216-21	FILTER BLOCK, OPTICAL (410/510)
222	8-848-729-01	DEVICE, LENS LSV-630A
760	1-658-213-11	FP-355 FLEXIBLE BOARD
761	3-965-552-01	HOLDER (T), SENSOR
762	1-657-786-13	FP-221 FLEXIBLE BOARD
763	3-965-551-01	HOLDER (S), SENSOR
764	1-658-214-11	FP-356 FLEXIBLE BOARD
803	1-672-542-11	FP-38 FLEXIBLE BOARD

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
817	1-657-784-11	FP-220 FLEXIBLE BOARD	
BT901	1-694-384-11	TERMINAL BOARD, BATTERY	
D001	8-719-988-42	DIODE GL453	
IC1401	A-7030-821-A	CCD BLOCK ASSY (CCD IMAGER) (410/510)	
IC2401	A-7030-885-A	CCD BLOCK ASSY (CCD IMAGER) (410E/510E)	
J001	1-565-276-31	JACK, ULTRA SMALL 1P (LANC)	
LCD901	1-803-034-21	INDICATOR MODULE, LIQUID CRYSTAL	
LCD902	8-753-023-89	LCX024AK-J COMPLE	
⚠LED901	1-517-866-11	LIGHT, BACK	
M901	A-7048-904-A	DRUM BLOCK ASSY (DKH-01A-R)	
M902	8-835-635-01	MOTOR, DC SCE12A/C-NP (CAPSTAN)	
M903	X-3945-401-1	MOTOR ASSY, DC (LOADING)	
M905	1-763-262-11	MOTOR, FOCUS STEPPING	
M906	1-763-046-11	MOTOR, ZOOM STEPPING	
MIC901	1-542-312-11	MICROPHONE (L)	
MIC902	1-542-312-11	MICROPHONE (R)	
*⚠ND4801	3-988-563-01	ILLUMINATOR (458), BL	
⚠ND901	1-517-852-11	TUBE, FLUORESCENT,COLD CATHODE	
S001	1-692-614-11	SWITCH, PUSH (3KEY) (Hi8 MP,ME/MP,REC PROOF)	
S002	1-572-688-11	SWITCH, PUSH (1 KEY)(C.C.LOCK)	
S901	1-762-436-15	SWITCH, ROTARY (ENCODER) (MODE SW)	
SP901	1-504-753-41	SPEAKER (2.8CM)	

ACCESSORIES
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Ref. No.	Part No.	Description	Remarks
	1-418-422-11	REMOTE COMMANDER (RMT-814)(410E:E1)	
	1-475-141-61	REMOTE COMMANDER (RMT-814) (410/410E:AEP,UK,E,HK,AUS,CN,JE/510/510E)	
⚠	1-475-599-11	ADAPTOR, AC	
*	1-543-830-21	CLAMP, SLEEVE FERRITE (510/510E)	
	1-569-007-11	ADAPTOR, CONVERSION 2P (410:JE/410E:JE)	
	1-569-008-21	ADAPTOR, CONVERSION 2P (410:E,HK/410E:E,HK)	
	1-573-291-11	ADAPTOR, CONVERSION 21PIN (410E:AEP,UK/510E)	
	1-575-334-11	AV CONNECTING CABLE (1.5M)	
⚠	1-690-827-11	CORD SET, POWER (410E:AEP/510E:AEP)	
⚠	1-696-819-11	CORD, POWER (410E:AUS)	
⚠	1-769-608-11	CORD, POWER (410:E/410E:E)	
	1-770-783-11	CONNECTOR, CONVERSION (410E:AEP,UK/510E)	
	1-772-118-11	COMPACT DISK (510/510E)	
⚠	1-775-843-21	CORD, POWER (WITH FILTER) (410E:UK/510E:UK)	
⚠	1-782-476-11	CORD, POWER (410E:CN)	
	1-782-984-21	CABLE, DIGITAL STEEL CAMERA (510/510E)	
⚠	1-783-374-11	CORD, POWER (410:HK/410E:HK)	
⚠	1-790-073-11	CORD, POWER 2P (410:JE/410E:JE)	
⚠	1-790-107-22	CORD, POWER (510)	
	3-054-045-01	VIDEO, HOW TO TAKE (510:US)	
	3-742-854-01	LID,BATTERY CASE (for RMT-814)	
	3-866-123-11	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN) (410E:AEP,UK/510E)	
	3-866-123-21	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE)(410E:AEP/510E:AEP)	
	3-866-123-31	MANUAL, INSTRUCTION (GERMAN/ITALIAN) (410E:AEP/510E:AEP)	
	3-866-123-41	MANUAL, INSTRUCTION (FRENCH/DUTCH) (410E:AEP/510E:AEP)	
	3-866-124-11	MANUAL, INSTRUCTION (ENGLISH)(510)	
	3-866-124-21	MANUAL, INSTRUCTION (FRENCH)(510:CND)	
	3-866-124-31	MANUAL, INSTRUCTION (ENGLISH)(410)	
	3-866-124-41	MANUAL, INSTRUCTION (SPANISH/ITALIAN) (410)	
	3-866-124-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE)(410:E,HK)	
	3-866-124-71	MANUAL, INSTRUCTION (KOREAN)(410:JE)	
	3-866-125-11	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN) (410E:E,HK,AUS,CN,JE)	
	3-866-125-21	MANUAL, INSTRUCTION (FRENCH/GERMAN) (410E:E,HK,CN,JE)	
	3-866-125-31	MANUAL, INSTRUCTION (ARABIC/PERSIAN) (410E:E,CN)	
	3-866-125-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE)(410E:HK)	
	3-866-125-51	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE)(410E:E,CN,JE)	
	3-866-543-11	MANUAL, INSTRUCTION (ENGLISH)(510)	
	3-866-543-21	MANUAL, INSTRUCTION (FRENCH)(510:CND)	
	3-866-544-11	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN) (510E)	
	3-866-544-21	MANUAL, INSTRUCTION (GERMAN/FRENCH) (510E:AEP)	
	3-866-544-31	MANUAL, INSTRUCTION (ITALIAN/DUTCH) (510E:AEP)	
	3-866-544-41	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE)(510E:AEP)	
	3-987-015-01	BELT (S), SHOULDER	
	A-7094-140-A	NP-F330 BATTERY PACK (510)	
	A-7094-141-A	NP-F330 BATTERY PACK (410/410E/510E)	

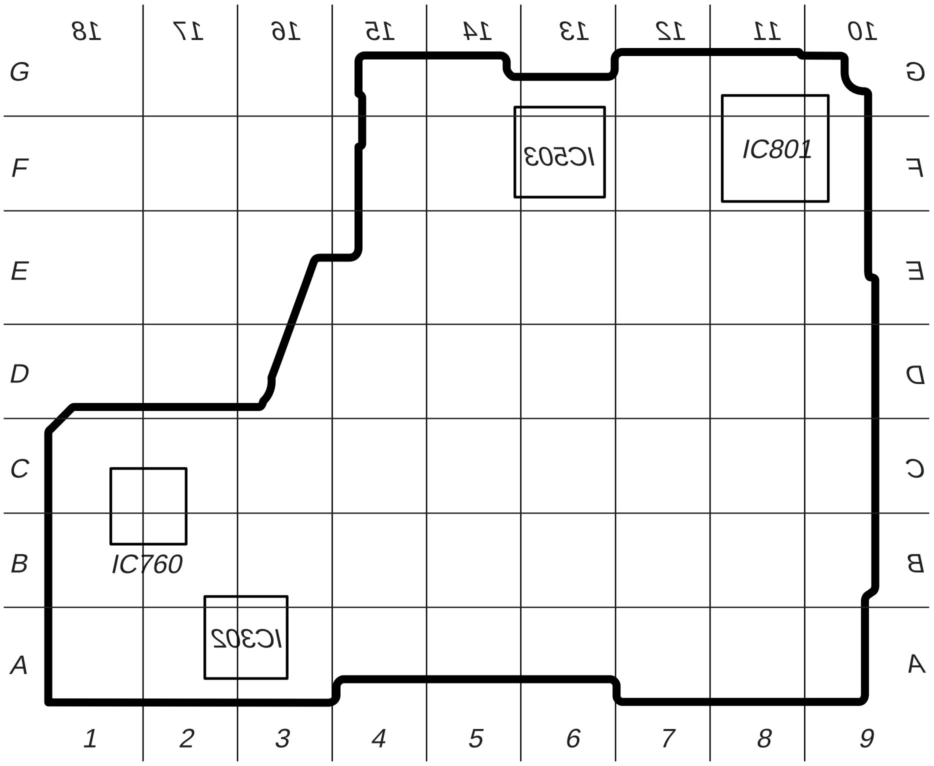
Be sure to read “Precautions upon replacing CCD imager” on page 4-11,14 when changing the CCD imager.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

⟨PARTS REFERENCE SHEET⟩

You can find the parts position of location of mount locations applying to VC-213 board of a set.

VC-213 DCR-TRV410/TRV410E/TRV510/TRV510E SIDE A



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IC801
IC760
IC302
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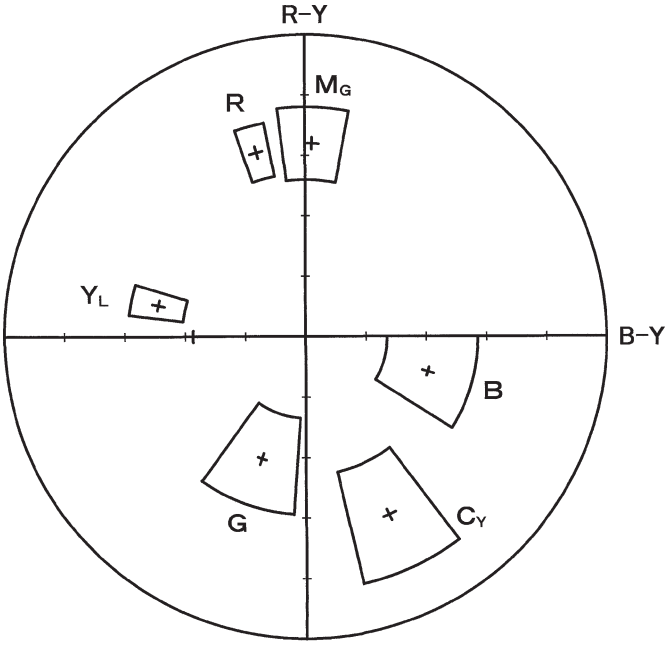
SIDE B DCR-TRV410/TRV410E/TRV510/TRV510E **VC-213**

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

For NTSC 720H model


R−Y
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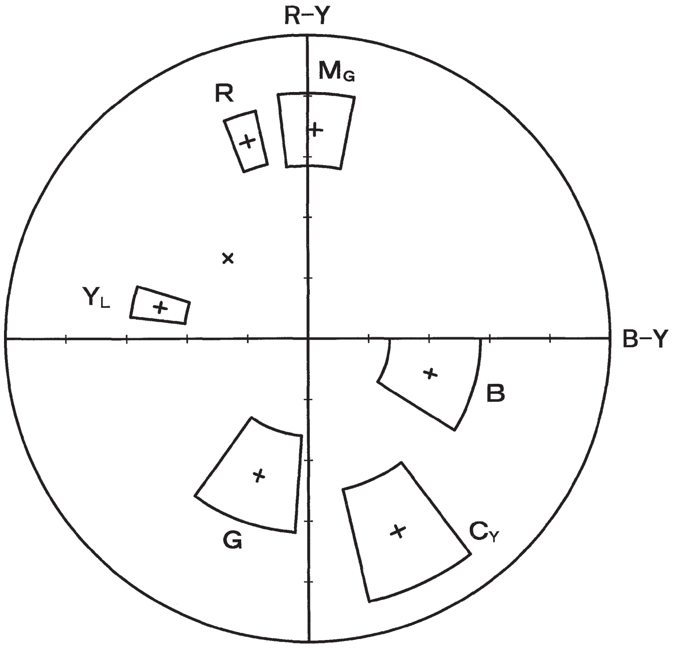
DCR-TRV410/TRV510

Take a copy of CAMERA COLOR REPRODUCTION FRAME and Parts referencesheets with a clear sheet for use.

For PAL 960H model


R−Y
MG
R
YL
B−Y
B
G
CY

DCR-TRV410E/TRV510E

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Personal A&V Products Company

99C1634-1
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Published by Quality Engineering Dept.
(Shinagawa)

DCR-TRV410/TRV410E/
TRV510/TRV510E
RMT-814

SONY

US Model
Canadian Model
DCR-TRV510
AEP Model
UK Model
DCR-TRV410E/TRV510E
E Model
Hong Kong Model
Tourist Model
DCR-TRV410/TRV410E
Australian Model
Chinese Model
DCR-TRV410E

SERVICE MANUAL

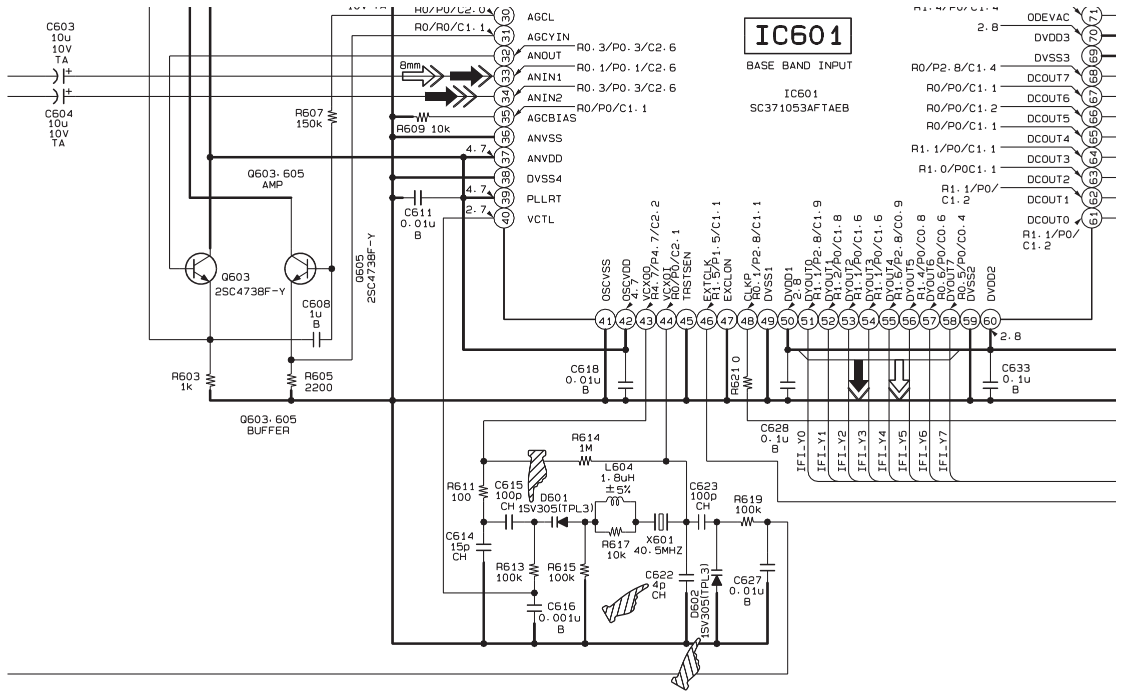
1999. 06

SUPPLEMENT-1

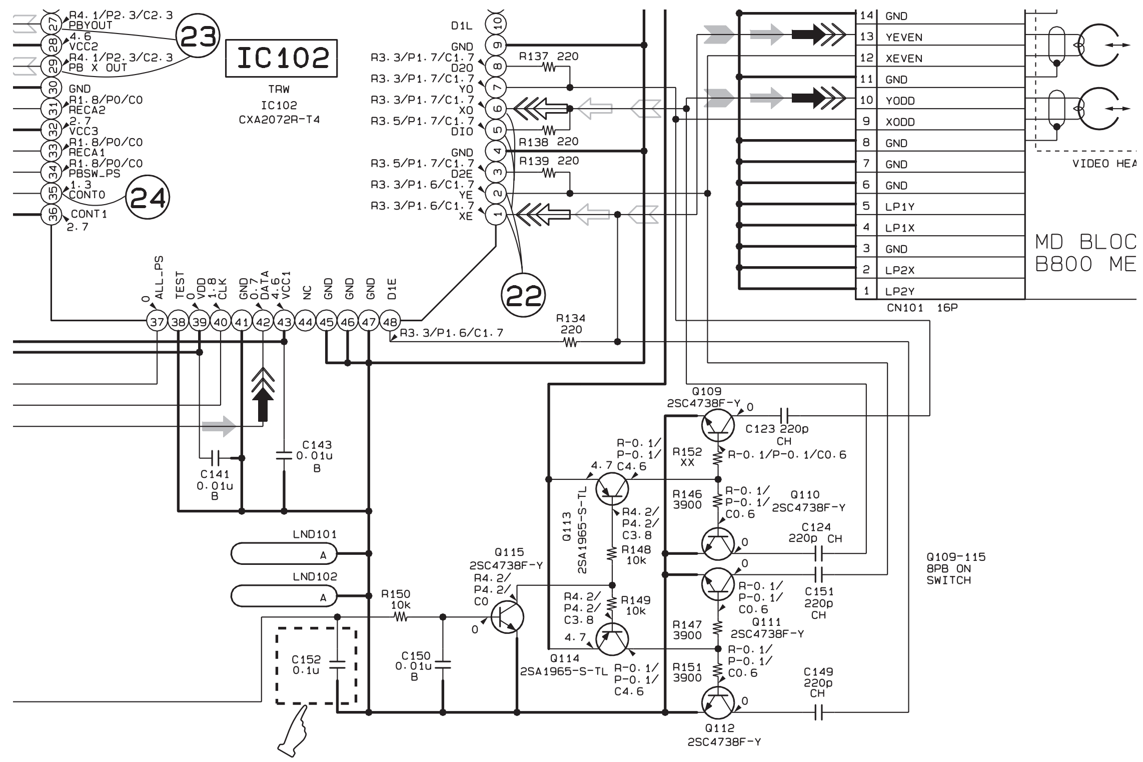
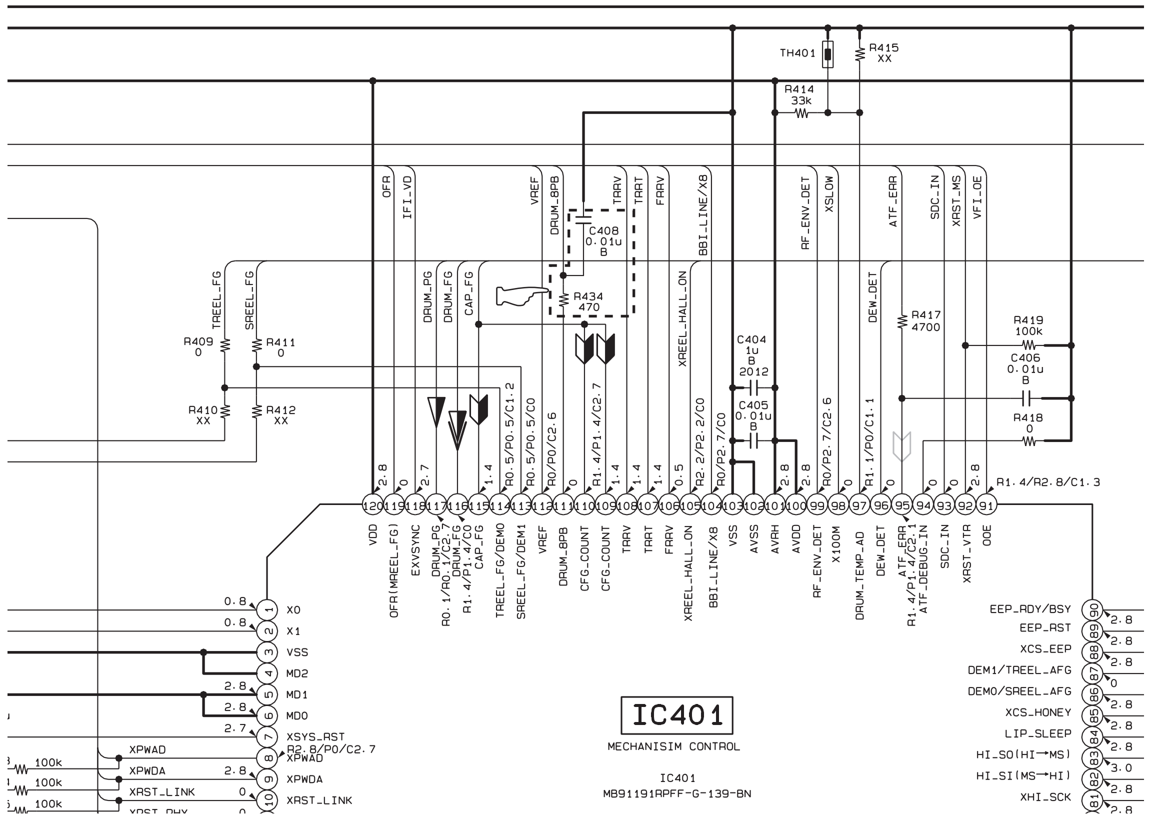
File this supplement with the Service Manual.

- Part number suffix of VC-213 board is changed to 13.
  (C152, C408 and R434 are added as the suffix is changed.)
- Change of the repair part supply.

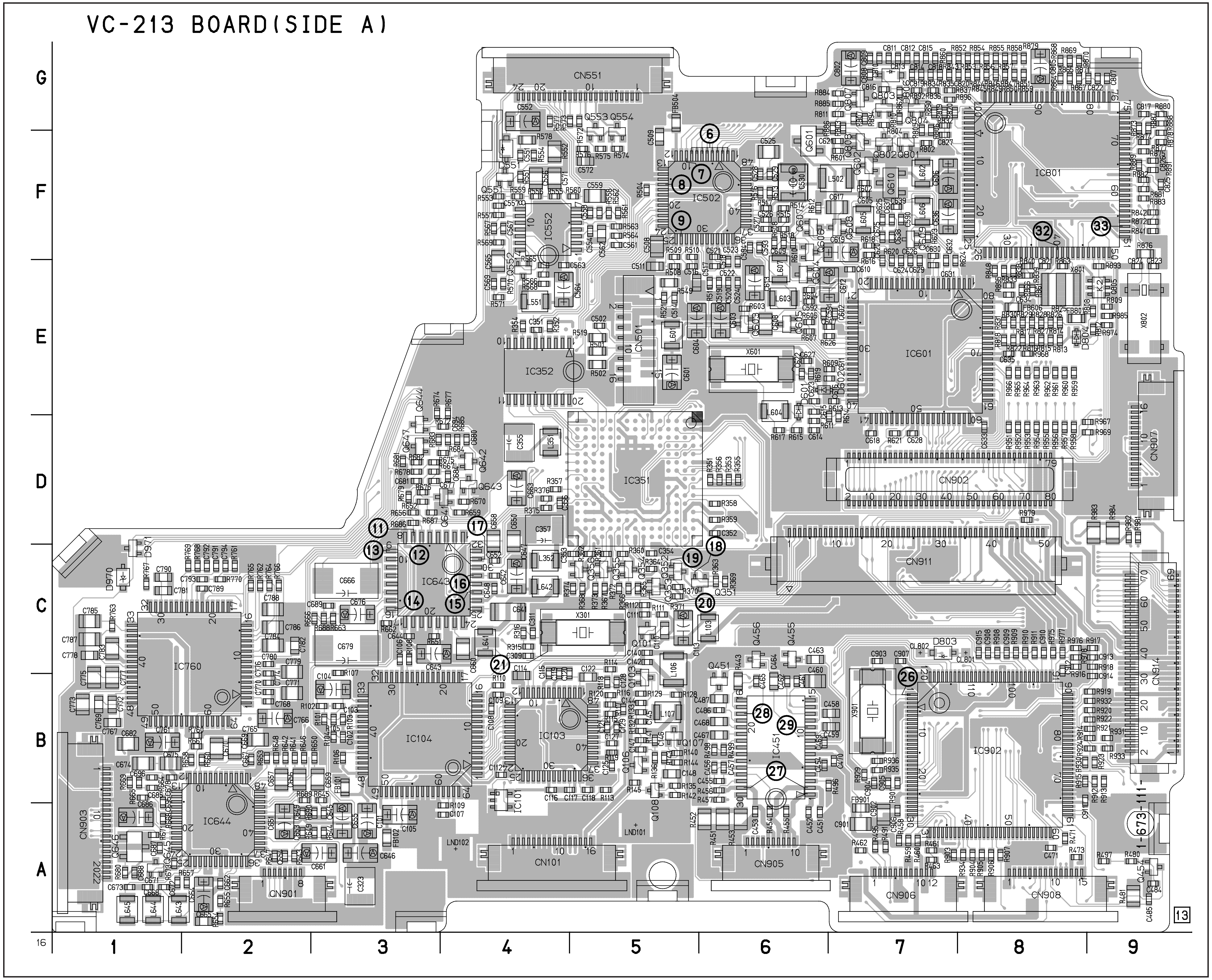
☞ : Added portion. ▨ : Chenged portion.

Page	Changed contents
4-28	**VC-213 BOARD (4/13) (LOCATION K-20)** (NTSC model only)  IC601 BASE BAND INPUT IC601 SC371053AFTAEB Q603 2SC4738F-Y Q603, 605 AMP Q605 2SC4738F-Y Q603, 605 BUFFER C603 10u 10V TA C604 10u 10V TA R607 150k R609 10k C611 0.01u B C608 1u B R603 1k R605 2200 C618 0.01u B R621 0 C628 0.1u B C633 0.1u B R614 1M L604 1.8uH ±5% C615 100p CH D601 1SV305(TPL3) C623 100p CH R619 100k R611 100 C614 15p CH R613 100k R615 100k R617 10k X601 40.5MHZ C616 0.001u B C622 4p CH D602 1SV305(TPL3) C627 0.01u B AGCL AGCYIN ANOUT ANIN1 ANIN2 AGCBIAS ANVSS ANVDD DVSS4 PLLAT VCTL ODEVAC DVDD3 DVSS3 DCOUT7 DCOUT6 DCOUT5 DCOUT4 DCOUT3 DCOUT2 DCOUT1 DCOUT0 IFI_Y0 IFI_Y1 IFI_Y2 IFI_Y3 IFI_Y4 IFI_Y5 IFI_Y6 IFI_Y7 8mm ☞ Note : Replace both parts C622, D601 and D602 together simultaneously when either one of them is replaced. Target models : TRV410/TRV510

☞ : Added portion.

Page	Added contents
4-37	**VC-213 BOARD (7/13) (LOCATION J-20)**  IC102 TRW IC102 CXA2072R-T4 ㉓ ㉔ ㉒ PBYOUT VCC2 PB X OUT GND RECA2 VCC3 RECA1 PBSW_PS CONT0 CONT1 ALL_PS TEST VDD CLK GND DATA VCC1 NC GND DIE D1L D2O YO XO DIO D2E YE XE R137 220 R138 220 R139 220 R134 220 GND YEVEN XEVEN YODD XODD LP1Y LP1X LP2X LP2Y CN101 16P VIDEO HEA MD BLOC B800 ME Q109 2SC4738F-Y C123 220p CH R152 XX R146 3900 Q110 2SC4738F-Y C124 220p CH Q113 2SA1965-S-TL R148 10k Q115 2SC4738F-Y R149 10k R150 10k R147 3900 Q111 2SC4738F-Y C151 220p CH Q109-115 BPB ON SWITCH LND101 LND102 C141 0.01u B C143 0.01u B C152 0.1u C150 0.01u B Q114 2SA1965-S-TL R151 3900 C149 220p CH Q112 2SC4738F-Y
4-52	**VC-213 BOARD (11/13) (LOCATION B-10)**  IC401 MECHANISIM CONTROL IC401 MB91191RPFF-G-139-BN TH401 R415 XX R414 33k C408 0.01u B R434 470 R409 0 R411 0 R410 XX R412 XX C404 1u B 2012 C405 0.01u B R417 4700 R419 100k C406 0.01u B R418 0 TREEL_FG SREEL_FG DRUM_PG DRUM_FG CAP_FG VREF DRUM_BPB TRRV TRRT FRRV XREEL_HALL_ON BBI_LINE/XB RF_ENV_DET XSLOW DEW_DET ATF_ERR SOC_IN XRST_MS VFI_OE X0 X1 VSS MD2 MD1 MD0 XSYS_RST XPWAD XPWDA XRST_LINK EEP_RDY/BSY EEP_RST XCS_EEP DEM1/TREEL_AFG DEM0/SREEL_AFG XCS_HONEY LIP_SLEEP HI_SO(HI→MS) HI_SI(MS→HI) XHI_SCK

< Page 4-65, 4-66 > VC-213 BOARD (SIDE A) SUFFIX No. -13


VC-213 BOARD(SIDE A)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
16
CN551
IC502
IC801
IC552
IC352
CN501
X601
IC601
CN907
IC351
CN902
CN911
IC643
IC760
X301
CN914
IC104
IC103
IC451
X901
IC902
IC644
CN903
CN901
CN101
CN905
CN906
CN908
1-673-111-
13
⑥
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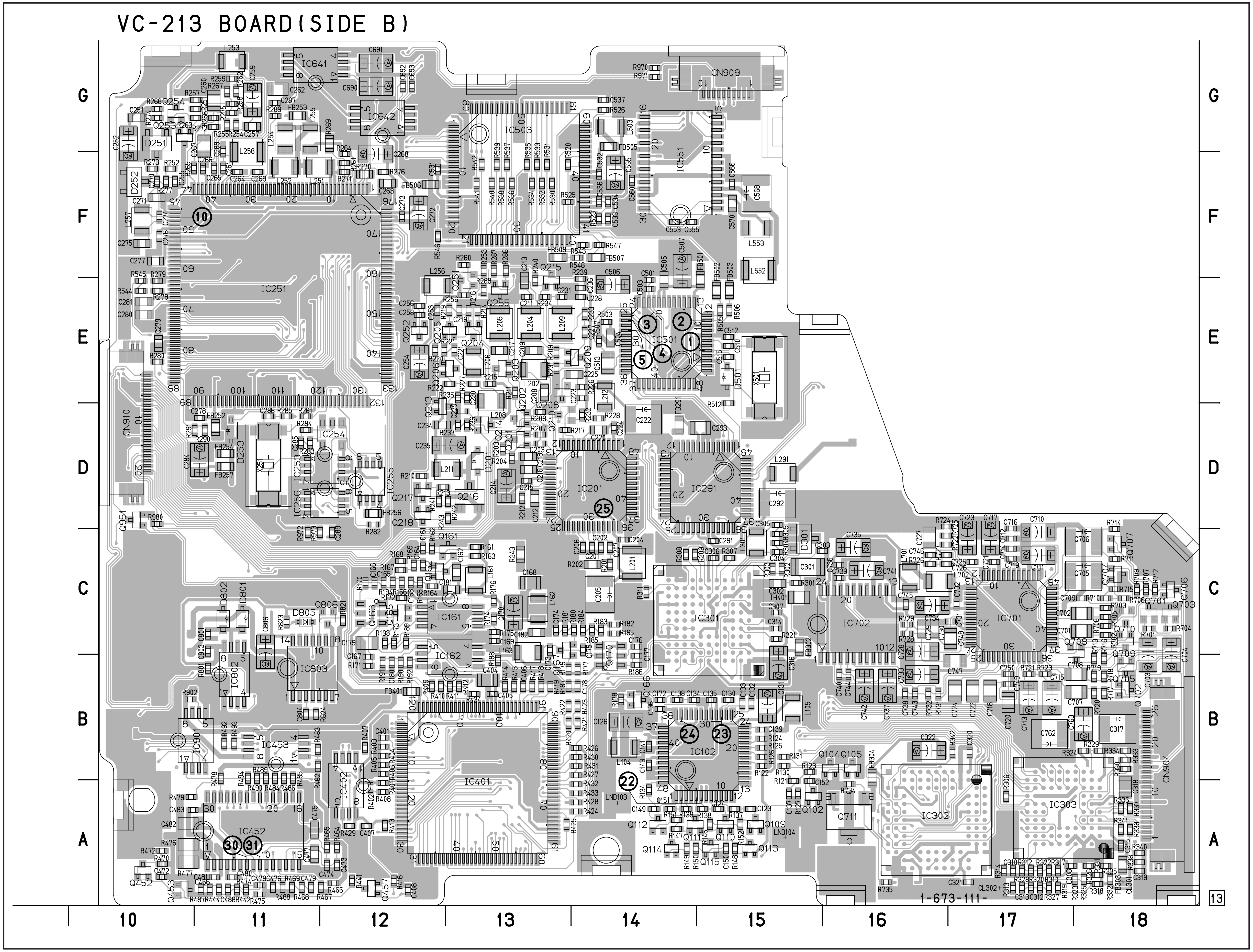
< Page 4-67, 4-68 > VC-213 BOARD (SIDE B) SUFFIX No. -13

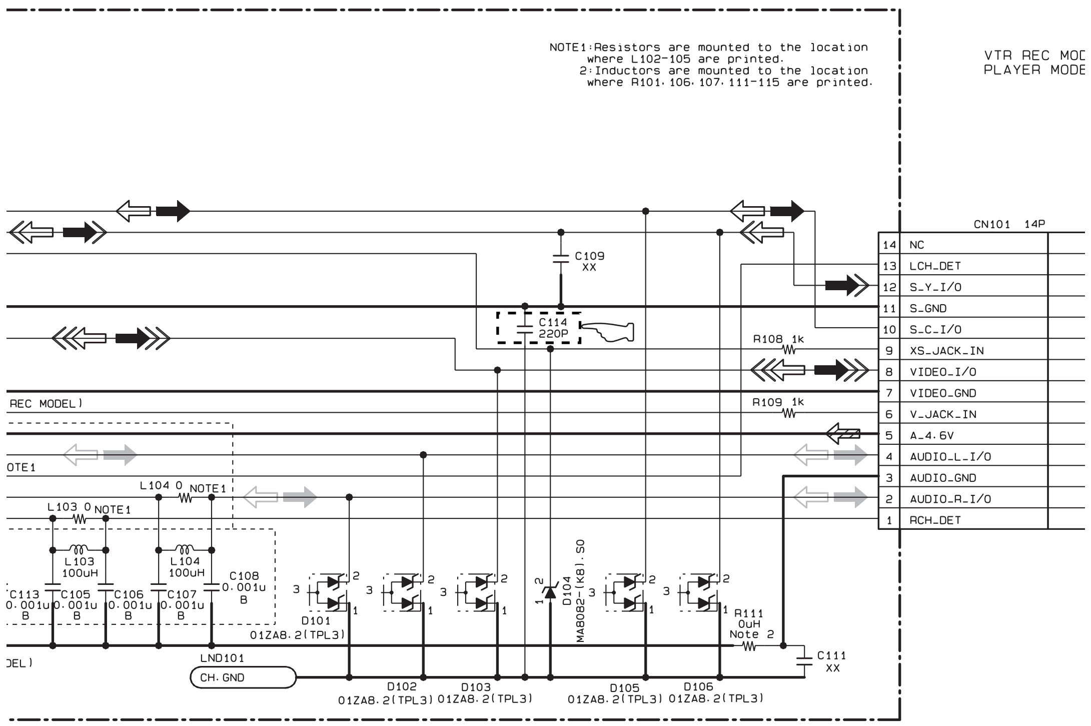

VC-213 BOARD(SIDE B)
G
F
E
D
C
B
A
10
11
12
13
14
15
16
17
18
IC641
IC642
IC503
IC551
IC251
IC501
IC254
IC253
IC255
IC256
IC201
IC291
IC161
IC162
IC301
IC702
IC701
IC802
IC803
IC901
IC453
IC452
IC402
IC401
IC102
IC302
IC303
CN909
CN910
CN904
D251
D252
D253
D201
D301
D501
D801
D802
D805
X251
X501
Q711
1-673-111-
13

☞ : Added portion. ☞ : Chenged portion.

Page	Added contents
4-69	**VC-213 BOARD (SIDE B)** **LOCATION TABLE**

C142	B-14
C149	A-14
C150	A-15
C151	A-14
C152	B-15
C161	C-12
C162	C-13
C163	C-12
C164	C-12
C401	B-12
C404	B-13
C405	B-13
C406	B-13
C407	A-12
C408	A-12
C472	A-10
C473	A-12
C474	A-12
R121	B-15
R122	B-15
R123	B-15
R124	B-15
R125	B-15
R126	B-15
R127	A-15
R130	B-15
R430	B-14
R431	B-14
R432	A-14
R433	A-14
R434	B-13
R441	A-12
R442	A-11
R444	A-11
R464	A-12

Page	Added contents
4-73	**PJ-97 BOARD (LOCATION C-9)**


NOTE1:Resistors are mounted to the location
where L102-105 are printed.
2:Inductors are mounted to the location
where R101, 106, 107, 111-115 are printed.
VTR REC MOD
PLAYER MODE
CN101 14P
14 NC
13 LCH_DET
12 S_Y_I/O
11 S_GND
10 S_C_I/O
9 XS_JACK_IN
8 VIDEO_I/O
7 VIDEO_GND
6 V_JACK_IN
5 A_4.6V
4 AUDIO_L_I/O
3 AUDIO_GND
2 AUDIO_R_I/O
1 RCH_DET
C109
XX
C114
220P
R108 1k
R109 1k
REC MODEL)
OTE1
L104 0
NOTE1
L103 0
NOTE1
L103
100uH
L104
100uH
C108
0.001u
B
C113
0.001u
B
C105
0.001u
B
C106
0.001u
B
C107
0.001u
B
D101
01ZA8.2(TPL3)
D102
01ZA8.2(TPL3)
D103
01ZA8.2(TPL3)
D104
MA8082-(K8).SO
D105
01ZA8.2(TPL3)
D106
01ZA8.2(TPL3)
R111
0uH
Note 2
C111
XX
LND101
CH.GND
DEL)

☞ : Added portion.

Page	INCORRECT Ref. No.	INCORRECT Part No.	INCORRECT Description	INCORRECT Remarks	CORRECT Ref. No.	CORRECT Part No.	CORRECT Description	CORRECT Remarks
6-17		————			C114	1-162-960-11	CERAMIC CHIP 220P 10%	50V
6-19		————			C152	1-107-820-11	CERAMIC CHIP 0.1uF	16V
6-20		————			C408	1-164-943-11	CERAMIC CHIP 0.01uF 10%	16V
6-21	C622	1-164-847-11	CERAMIC CHIP 7PF 0.5PF	16V	C622	1-164-847-11	CERAMIC CHIP 7PF 0.5PF	16V (TRV410E/TRV510E)
		————			C622 (Note)	1-164-844-11	CERAMIC CHIP 4PF 0.25PF	16V (TRV410/TRV510)
6-23	D601	8-719-071-32	DIODE HVC350BTRF		D601	8-719-071-32	DIODE HVC350BTRF	(TRV410E/TRV510E)
		————			D601 (Note)	8-719-076-01	DIODE 1SV305(TPL3)	(TRV410/TRV510)
	D602	8-719-071-32	DIODE HVC350BTRF		D602	8-719-071-32	DIODE HVC350BTRF	(TRV410E/TRV510E)
		————			D602 (Note)	8-719-076-01	DIODE 1SV305(TPL3)	(TRV410/TRV510)
6-27		————			R434	1-218-949-11	RES,CHIP 470 5%	1/16W

Note : Replace both parts C622, D601 and D602 together simultaneously when either one of them is replaced.

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DCR-TRV410/TRV410E/
TRV510/TRV510E
RMT-814

US Model
Canadian Model
DCR-TRV510
AEP Model
UK Model
DCR-TRV410E/TRV510E
E Model
Hong Kong Model
Tourist Model
DCR-TRV410/TRV410E
Australian Model
Chinese Model
DCR-TRV410E

SERVICE MANUAL

2001. 01

SUPPLEMENT-2

File this supplement with the Service Manual.

Subject:
· HP jack is changed from "not supplied" to a repair part for service.
· Change of part cord.
· Correction of adjustment data and parts.

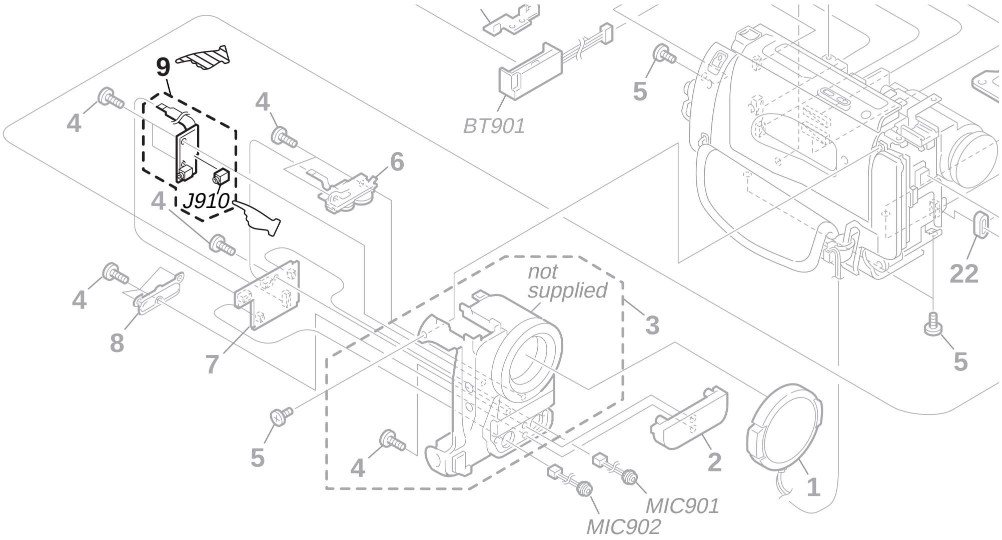
· HP jack is changed from “not supplied” to a repair part for service.

SECTION 6. REPAIR PARTS LIST

6-1. EXPLODED VIEWS

☞ : Added portion. ▨ : Changed portion.

Page	Changed contents
6-1	**6-1-1. FRONT PANEL (N4) AND BATTERY PANEL (P) BLOCK ASSEMBLY**



Ref. No.	Part No.	Description	Remarks
J910	1-695-514-21	JACK (SMALL TYPE) 1P ☞	

6-1. EXPLODED VIEWS

▨ : Changed portion.

Page	Before change				After change			
	6-1-2. CABINET (R) BLOCK ASSEMBLY				**6-1-2. CABINET (R) BLOCK ASSEMBLY**			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
6-2	66	X-3949-494-1	CABINET (R) (960) ASSY (510)		66	X-3949-494-4 ▨	CABINET (R) (960) ASSY (510)	
	66	X-3949-495-1	CABINET (R) (960) ASSY (510E)		66	X-3949-495-4 ▨	CABINET (R) (960) ASSY (510E)	
	66	X-3949-496-1	CABINET (R) (960) ASSY (410E: AEP,UK)		66	X-3949-496-4 ▨	CABINET (R) (960) ASSY (410E: AEP,UK)	
	66	X-3949-497-1	CABINET (R) (960) ASSY (410/410E:E,HK,AUS,CN,JE)		66	X-3949-497-4 ▨	CABINET (R) (960) ASSY (410/410E:E,HK,AUS,CN,JE)	

[CORRECTION]

Correct your service manual as shown below.

SECTION 5. ADJUSTMENTS

▨ : Changed portion.

Page: 5-72

INCORRECT

6. Record of Use Check

Page 2	Address A2 to AA

Address	Function		Remarks
A2	Drum rotation	Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
A3	counted time	Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4	(BCD code)	Minute	

CORRECT

6. Record of Use Check

Page 2	Address A2 to AA

Address	Function		Remarks ▨
A2	Drum rotation	Minute	
A3	counted time	Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4	(BCD code)	Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)

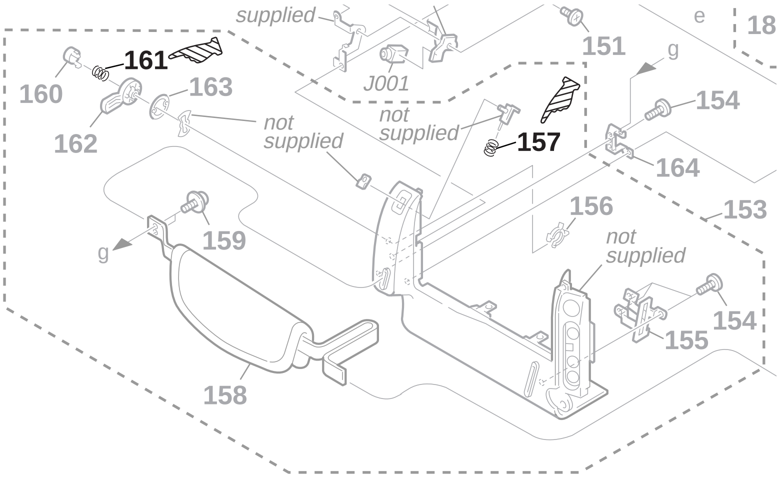
SECTION 6. REPAIR PARTS LIST

6-1. EXPLODED VIEWS

▨ : Changed portion.

Page: 6-4

6-1-4. CABINET (L) BLOCK AND MAIN BOARDS ASSEMBLY



INCORRECT

Ref. No.	Part No.	Description	Remarks
157	3-979-642-01	SPRING, COMPRESSION	
161	3-302-492-00	SPRING, COMPRESSION	

CORRECT

Ref. No.	Part No.	Description	Remarks
157	3-302-492-00 ▨	SPRING, COMPRESSION	
161	3-979-642-01 ▨	SPRING, COMPRESSION	

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2001A1600-1

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Revision History

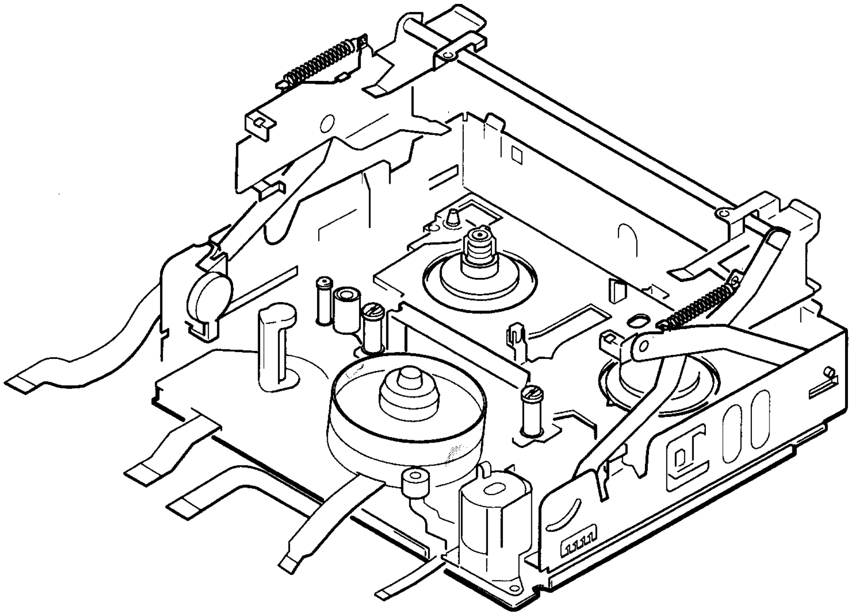
Ver.	Date	History	Contents	S.M. Rev. issued
1.0	1999.03	Official Release	—	—
1.1	1999.06	Supplement-1/	Part number suffix of VC-213 board is changed to 13. (C152, C408 and R434 are added as the suffix is changed.) Change of the repair part supply.	Yes
		Correction-1	Change of adjustment data. Correction of Note for simultaneous Replacement of Parts. S.M. correction: Page 5-21, 5-57, 5-58, 5-59, 6-2, 6-5	
1.2	2001.01	Supplement-2/ Correction	HP jack is changed from “not supplied” to a repair part for service. Change of part cord. Correction of adjustment data and parts. S.M. correction: Page 5-72, 6-4	Yes

8mm Video MECHANICAL ADJUSTMENT MANUAL Ⅶ

B MECHANISM

Video8

Use this mechanical adjustment manual Ⅶ together with
the service manual of the respective models.



8 MECHANISM DECK

SONY®

MICROFILM

TABLE OF CONTENTS

1. PREPARATION FOR CHECKING, ADJUSTING AND REPLACING THE MECHANISM

1-1. Cassette Compartment Block Assy ··············· 3
1-2. How to Operate the Mechanism with the Cassette Compartment Block Assy Removed ············· 4

2. PERIODIC CHECK AND MAINTENANCE ITEMS

2-1. Rotary Drum Assy Cleaning ··················· 5
2-2. Tape Path Cleaning ························· 5
2-3. Periodic Check Items ······················· 6
2-4. Service Tool List ·························· 7

3. CHECKING, ADJUSTING AND REPLACING THE MECHANISM

3-1. HC Roller Block Assy······················· 8
3-2. Drum Assy ································ 9
3-3. Drum Base Block Assy, Shaft Ground ··········· 10
3-4. Gooseneck Retainer, Gooseneck Gear Assy ········ 11
3-5. LS Chassis Block Assy, Mechanical Chassis Block Assy ················· 12
3-6. T Reel Table Assy, T Ratchet, T Soft Gear Block Assy ······················ 15
3-7. Tension Regulator Band Assy, TG1 Arm Assy, S Reel Table Assy, S Ratchet, S Ratchet Release Plate, RVS Arm··············· 16
3-8. Pinch Arm Assy, TG4 Arm Block Assy ··········· 17
3-9. LS Cam Plate, LS Guide Cover, Lid Opener, EJ Arm, Lock Guide ························ 18
3-10. Guide Base (S) and (T) Block Assemblies, Guide Rail ······························· 19
3-11. DC Motor Assy (Loading) ···················· 21
3-12. Tension Regulator Plate 2, Relay Gear, M Slider Assy ······························ 22
3-13. LS Arm, HC Drive Arm, Pinch Press Plate, Tension Regulator Plate ······················ 23
3-14. Cam Gear ································ 24
3-15. GL Slider Assy, GL Arm ···················· 25
3-16. Rotary Switch ···························· 26
3-17. Capstan Motor···························· 27
3-18. Tension Regulator Position Adjustment ··········· 28
3-19. FWD Tape Hold -Back Tension Adjustment ········ 29

4. TAPE PATH ADJUSTMENT

4-1. Preparations for Adjustment ··················· 30
4-2. Tracking Adjustment ························ 31
4-3. No. 4 Guide (TG-4) Adjustment ··············· 31
4-4. CUE, REV Waveforms Check ················· 32
4-5. Checks After Adjustments ···················· 32

5. EXPLODED VIEWS

5-1. Cassette Compartment Block Section············· 34
5-2. LS Chassis Block Section ····················· 35
5-3. Mechanism Chassis Block Section ··············· 36

6. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM ················· 37

7. ELECTRICAL PARTS LIST ··············· 38

For the mode selector operation, schematic diagram and parts list, refer to the Supplement-1 Manual.

1. PREPARATION FOR CHECKING, ADJUSTING AND REPLACING THE MECHANISM

For the disassembly procedures of the cabinet and printed wiring boards, please refer to the "DISASSEMBLY" section of the service manual of the respective models.
To re-assemble the mechanical parts which are disassembled in the following sections, perform the disassembly steps in reverse, unless otherwise specified.
The mechanisms are adjusted while set in the USE mode of operation. (Refer to the "Mode Selector Operation Procedure of the Supplement-1 Manual for how to enter the USE mode.)

1-1. Cassette Compartment Block Assy

1. Disassembly Procedure (Refer to Fig. 1.)

1) Set the mechanism to USE mode.
2) Confirm that the Cassette Compartment Block Assy is opened. If it is not opened, open it referring to Fig. a.
3) Remove the claws Ⓐ and Ⓑ of the Damper Assy ① from the chassis.
4) Remove the washer ② from the shaft of the Cassette Compartment near the Drum, next to the loading motor. Remove the shaft of the arm from the slot.
5) Remove the shaft of the arm from the slot Ⓒ of the Cassette Compartment near the Drum, next to the capstan motor. (Refer to Fig. b)
6) Lift up the Cassette Compartment at the Drum side in the direction of the arrow Ⓓ, and remove the arm shaft of the Cassette Compartment from the LS Chassis ④ near the Reel Tables. Remove the Cassette Compartment Assy ③ in the direction of the arrow Ⓔ.

2. Precautions During Re-Assembling

1) After attaching the Tension Spring, confirm that the straight portion at the end of the curved hook of the spring is positioned inside the mechanism. (Refer to Fig. c)
2) Confirm that the claw in the bottom of the shaft near the Reel Table of the Cassette Compartment is hooked to the LS Chassis.
3) Confirm that the claw of the Damper Assy is hooked to the LS Chassis. (Refer to Fig. b)

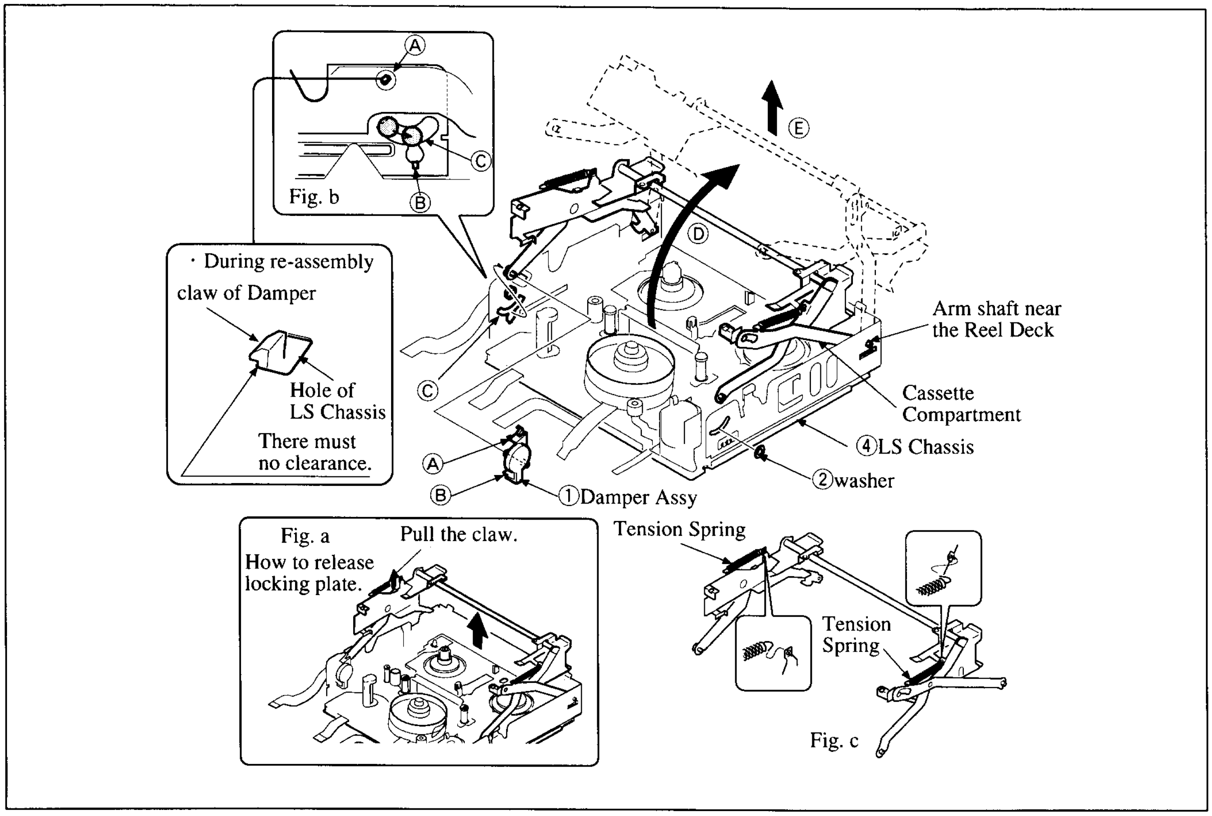

Ⓐ
Ⓒ
Fig. b
Ⓑ
Ⓔ
Ⓓ
· During re-assembly
claw of Damper
Hole of
LS Chassis
There must
no clearance.
Arm shaft near
the Reel Deck
Ⓒ
Cassette
Compartment
④LS Chassis
Ⓐ
Ⓑ
①Damper Assy
②washer
Fig. a
Pull the claw.
How to release
locking plate.
Tension Spring
Tension
Spring
Fig. c

Fig. 1

1-2. How to Operate the Mechanism with the Cassette Compartment Block Assy Removed

1. How to load a cassette tape (Refer to Fig. 2):

1) While referring to section "DISASSEMBLY" of the respective service manual, turn the main power on with the cabinet and camera section removed. (It enables to operate the mechanical deck.)
2) Connect the adjustment remote commander (Ref. No. J-10) and establish the TEST mode.

> Example of establishing the TEST mode: model CCD-TR420E/TR440E.
> Select page: 6, address: 00, set data :01 and press the PAUSE button to release protection.
> Select page: 7, address: 01, set data: 01 and press the PAUSE button.
> After tape loading or other desired operations of mechanism are completed, be sure to perform the following:
> Select page: F, address: 01, set data :00 and press the PAUSE button.
> Select page: 6, address: 00, set data: 00 and press the PAUSE button.

3) Press the push-switch ① knob in the direction of the arrow which sets the machine into loading mode.

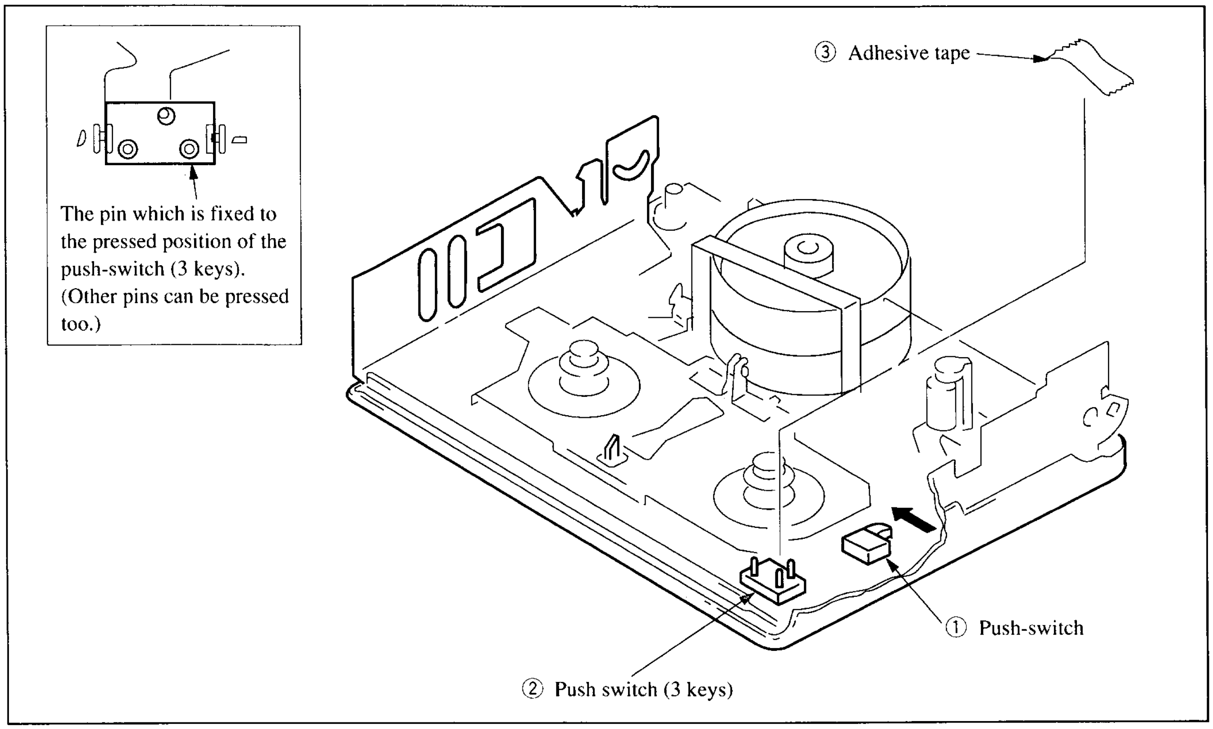
☆ PB, FF/REW and CUE/REV operations are possible.

2. How to establish RECORD mode:

1) Press pin of the push-switch ② (ON state) and keep the ON state by fixing with adhesive tape ③.
2) Turn the main power switch ON (select VTR or CAMERA position of in case of camera).
3) Set the RECORD switch to ON.
   (When the TEST mode is selected, the rotation detection of the S and T reel tables is muted, and the top end sensor is disable which allow to run the tape.)

3. How to eject a cassette tape:

1) Press the EJECT switch to ON.



The pin which is fixed to the pressed position of the push-switch (3 keys). (Other pins can be pressed too.)

Fig. 2

2. PERIODIC CHECK AND MAINTENANCE ITEMS

- Perform the following periodic check and maintenance to ensure that the machine functions continue to operate in peak condition, and to protect the tape and mechanism deck. After completing repair work, perform the following maintenance items regardless of how long the user's machine has been used.

2-1. Rotary Drum Assy Cleaning

Press the cleaning piece (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly on the Rotary Drum Assy. Gently turn the Rotary Drum Assy slowly by hand counter-clockwise to clean the rotary drum.

Caution: Never attempt to turn the head drum motor by turning the main power ON. Also, never turn the drum clockwise by hand. In addition, never move the cleaning piece vertically with respect to the head tips, since this will damage them. Never clean the head drum in any way other than as described above.

2-2. Tape Path Cleaning (Refer to Fig. 3.)

1) Set the mechanism to USE mode. Clean the tape path system (TG-1, TG-2, TG-3, TG-4, pinch roller, capstan shaft) and lower drum using a very thin cotton swab (Ref. No. J-3) moistened with cleaning fluid.

Caution: Take care that the very thin cotton swab (Ref. No. J-3) does not touch the oil or grease of the various link mechanisms.

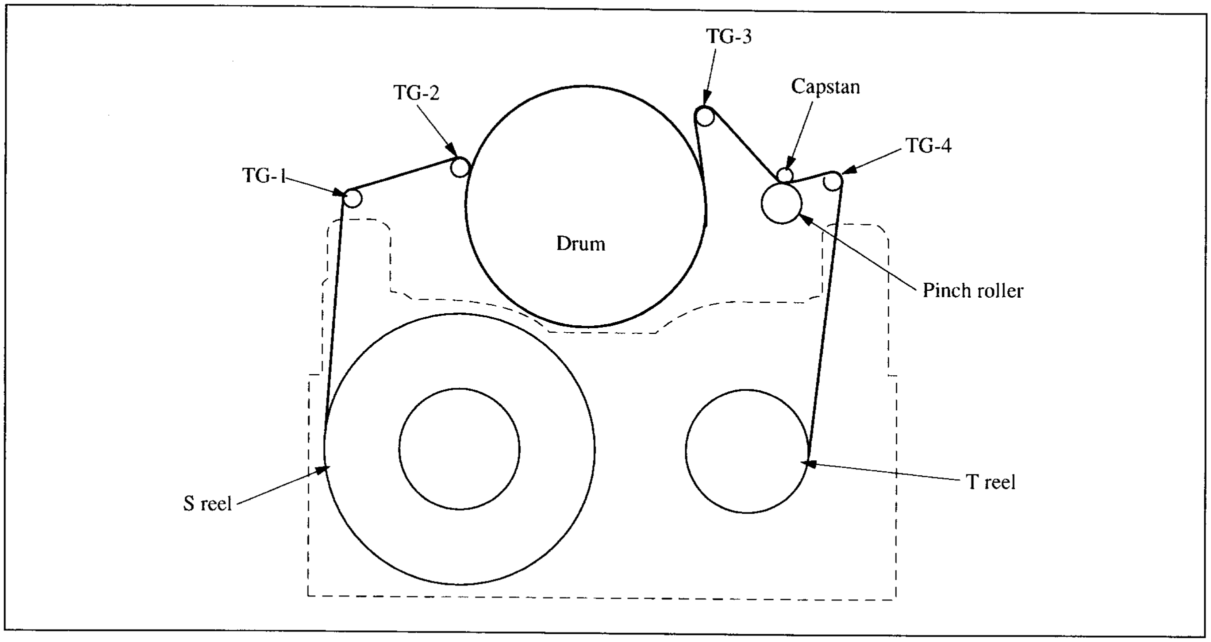


Fig. 3

2-3. Periodic Check Items

Maintenance and Inspection Points		Operating Hours										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Cleaning of tape running surface	○	○	○	○	○	○	○	○	○	○	Take care not to get oily.
	Cleaning and degaussing of Rotary Drum Assy	○	○	○	○	○	○	○	○	○	○	Take care not to get oily.
Drive System	Timing Belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-965-546-01
	Capstan Shaft	—	◎	—	◎	—	◎	—	◎	—	◎	Take great care not to let any oil contact the tape running surface.
	Change Gear Shaft Relay Pulley Shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading Motor	—	☆	—	☆	—	☆	—	☆	—	☆	X-3945-401-1
Performance Check	Abnormal Sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Tape Hold-back Tension Measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake System	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD RVS } Torque Measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○Cleaning ◎Lubrication ☆Check

Note: When overhauling the machine, replace the parts while referring to the above table.

Note: Regarding oil

- Be sure to use the specified oil. (If the viscosity and other characteristics are different, various troubles may arise.)
  Oil: Sony part No. 7-661-018-18
  (Mitsubishi diamond oil hydro fluid NT-68)
- For the oil lubricated bearings, use oil free from dust or foreign materials. If the oil contains any dust or foreign material, the bearings will wear out quickly or burn out.
- One drop of oil is the amount of oil which forms at the tip of a stick of 2 mm diameter.

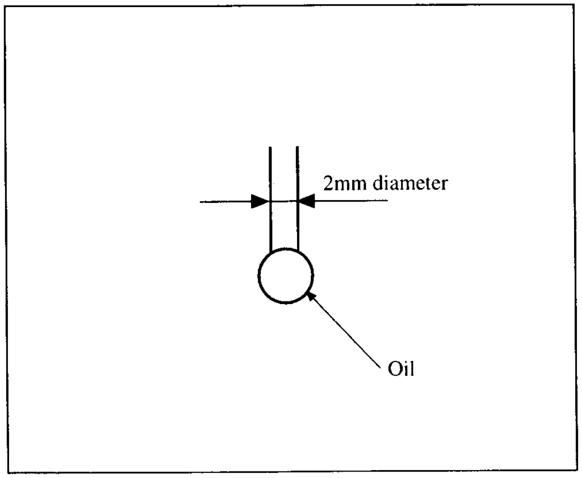


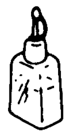
Fig. 4

2-4. Service Tool List

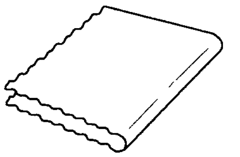
Ref. No.	Name	Parts Code	Tool Stamp	Applications
J-1	Cleaning fluid	Y-2031-001-0	—	
J-2	Cleaning piece	2-034-697-00	—	
J-3	Very thin cotton swab (made by Nippon Cotton Swab Inc. (P752D))		—	
J-4	Head demagnetizer	Commercially available	—	
J-5	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-6	Alignment tape (NTSC : WR5-1NP) (PAL : WR5-1CP)	8-967-995-02 8-967-995-07	—	Tape path
J-7	FWD/RVS take-up torque cassette	J-6080-824A	GD-2086	
J-8	Screwdriver for tape path adjustment	J-6082-026-A	—	For tape guide adjustment
J-9	FWD/BACK tension adjustment screwdriver	J-6082-187-A	—	
J-10	Remote commander for adjustment	J-6082-053-B	—	Tape path (Setting PATH mode)
J-11	MD process table	J-6082-166-A	—	
J-12	FLOIL Grease SG-941	7-662-001-39	—	
J-13	FLOIL Grease SG-055G	7-651-000-09	—	

Other equipment
- Oscilloscope
- Analog circuit tester (input impedance 20 kΩ)

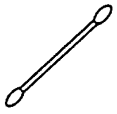
J-1



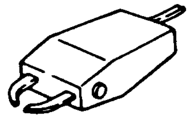
J-2



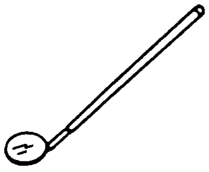
J-3



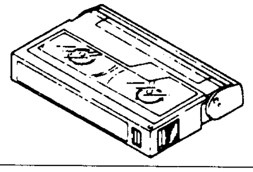
J-4



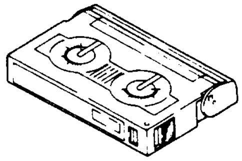
J-5



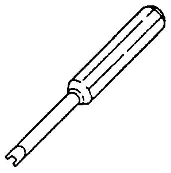
J-6



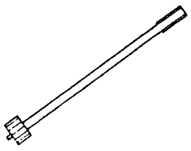
J-7



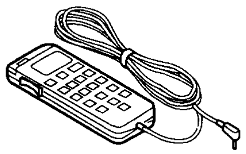
J-8



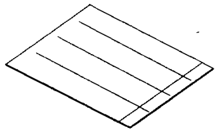
J-9



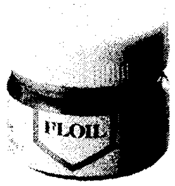
J-10



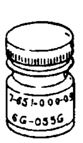
J-11



J-12



J-13



3. CHECKING, ADJUSTING AND REPLACING THE MECHANISM

3-1. HC Roller Block Assy (Refer to Fig. 5)

1. Disassembly Procedure

1) Remove the Torsion Spring ① from the cut-out Ⓐ of the motor holder. Hook it to the claw Ⓑ of the HC Arm.
2) Remove the HC Roller Block Assy in the direction shown by Ⓒ.
3) Remove the stop washer ② and remove the HC Roller Block Assy ③.

2. Precautions During Re-Assembly

1) After attaching the HC Roller Block Assy, confirm that both ends of the torsion spring are hooked to Ⓐ and Ⓓ.
2) Align the block so that the cut-out Ⓔ agrees with the rib Ⓕ.

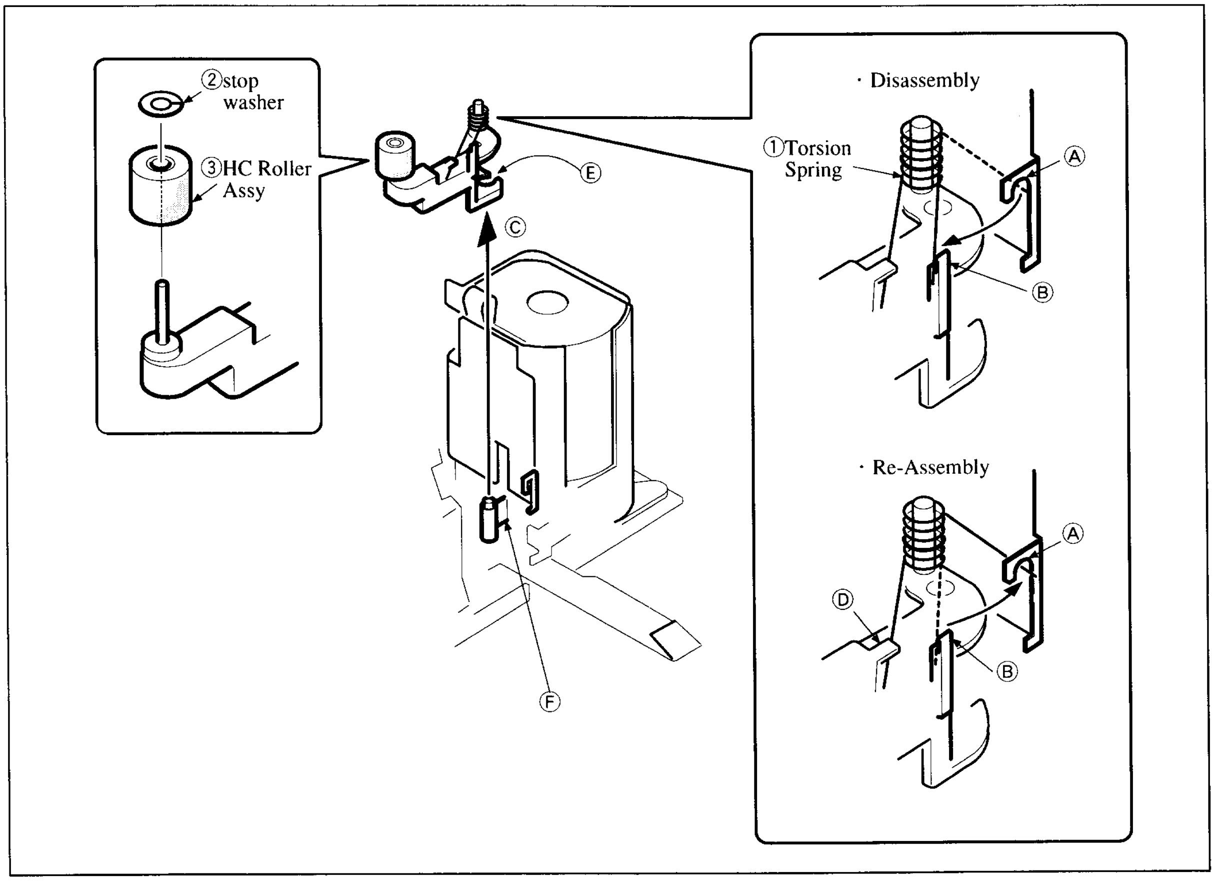

②stop washer
③HC Roller Assy
Ⓔ
Ⓒ
Ⓕ
· Disassembly
①Torsion Spring
Ⓐ
Ⓑ
· Re-Assembly
Ⓐ
Ⓓ
Ⓑ

Fig. 5

3-2. Drum Assy (Refer to Fig. 6)

1. Disassembly Procedure

1) Set the mechanism to USE mode.
2) Remove the three screws (M 1.4) ① and remove the Drum Assy ②.

Caution: Be careful not to touch the outer circumference of the drum. (Hold the portions Ⓐ and Ⓑ of the drum assy.)

2. Precautions During Re-Assembly

1) Be careful not to touch the outer circumference of the drum. (Hold the portions Ⓐ and Ⓑ of the drum assy.)
2) When tightening the three screws (M 1.4), tighten them in the order Ⓒ, then Ⓓ, then Ⓔ.
3) After attaching the Drum Assy, perform the steps in section "4. TAPE PATH ADJUSTMENT".

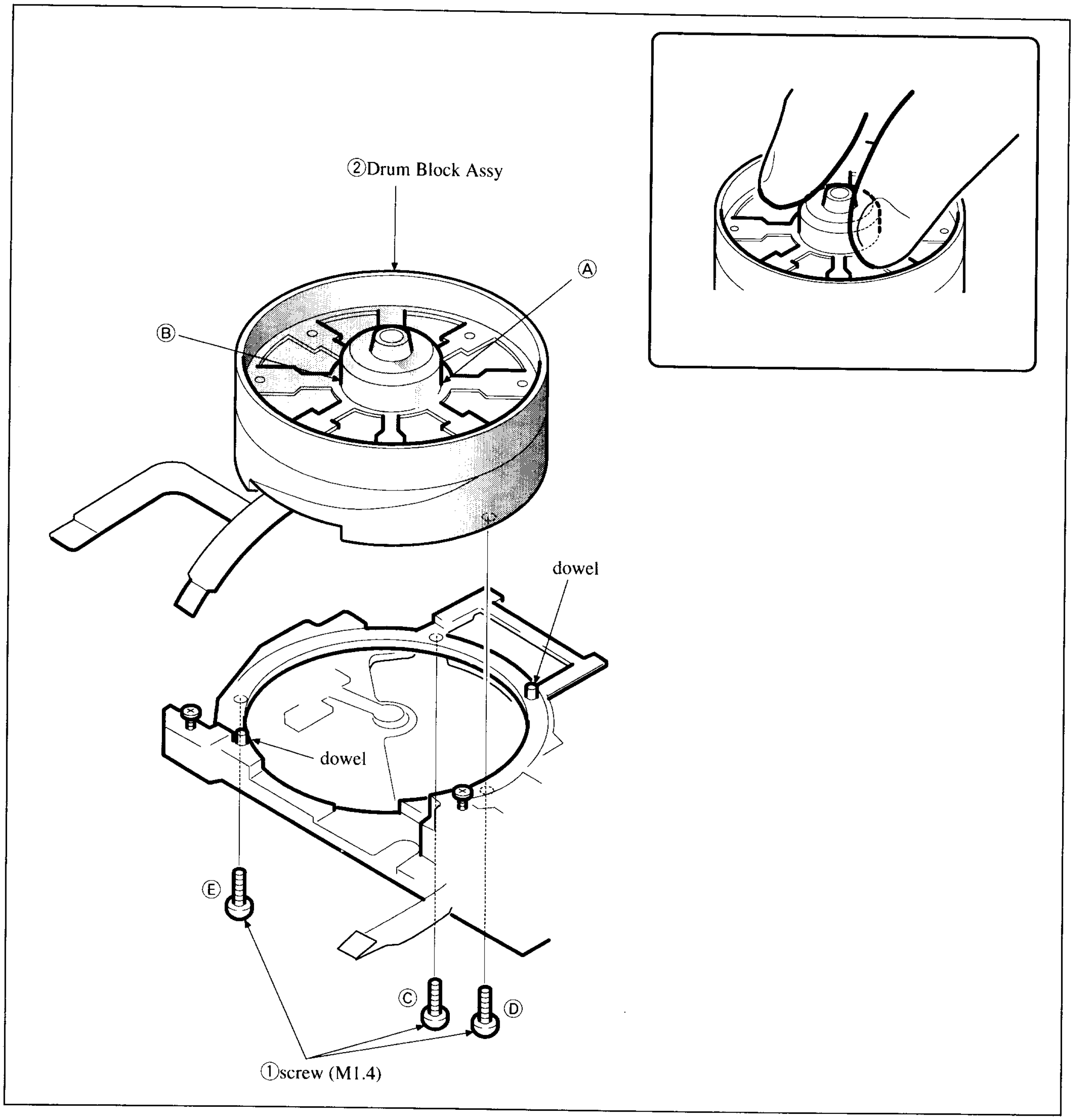


Fig. 6

3-3. Drum Base Block Assy, Shaft Ground (Refer to Fig. 7)

1. Disassembly Procedure

1) Remove the Drum Assy referring to section 3-2.
2) Remove the three screws (M 1.4×2.5) ① and remove the Drum Base Block Assy ②.
3) Remove the screw (M 1.7×1.4) ③ and remove the Shaft Ground ④.

Caution 1: Do not hold the spring portion of the Shaft Ground ④.

Caution 2: The loading motor can be removed while the mechanism is in this state. However, do not move any other mechanical parts (especially gears and cams around the rotary switch) when removing the loading motor. (Refer to 3-11.)

2. Precautions During Re-Assembly

1) Do not touch the spring portion of the Shaft Ground ④.
2) When tightening the three screws (M 1.4×2.5), tighten them in the order of Ⓐ, then Ⓑ, then Ⓒ.
3) After re-assembly is completed, perform the steps in section "4. TAPE PATH ADJUSTMENT".

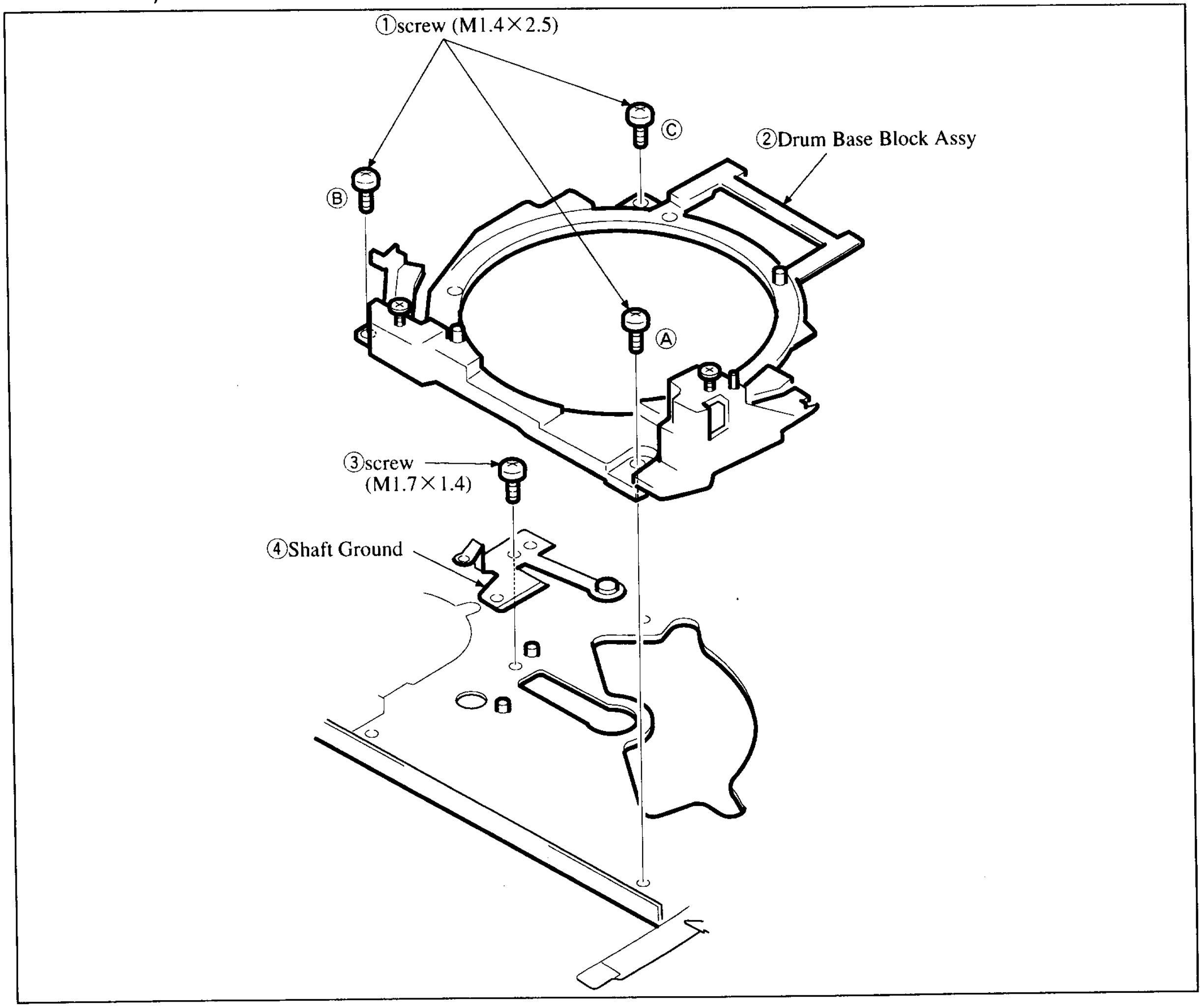


Fig. 7

3-4. Gooseneck Retainer, Gooseneck Gear Assy (Refer to Fig. 8)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the LED ① from the LED holder of the Gooseneck Retainer ③.
(Turn the flexible board 90° outside and remove it upward.)
3) Remove the three screws (M 1.4×2.5) ② and remove the Gooseneck Retainer ③.
4) Remove the stop washer ④ and remove the Gooseneck Gear Assy ⑤.

2. Precautions During Re-Assembly

1) When attaching the Gooseneck Retainer ③, take care that the Gooseneck Retainer ③ does not collide with the tension regulator band. (The tension regulator band must be located inside.)
2) Hook the T-side claw on the guide.

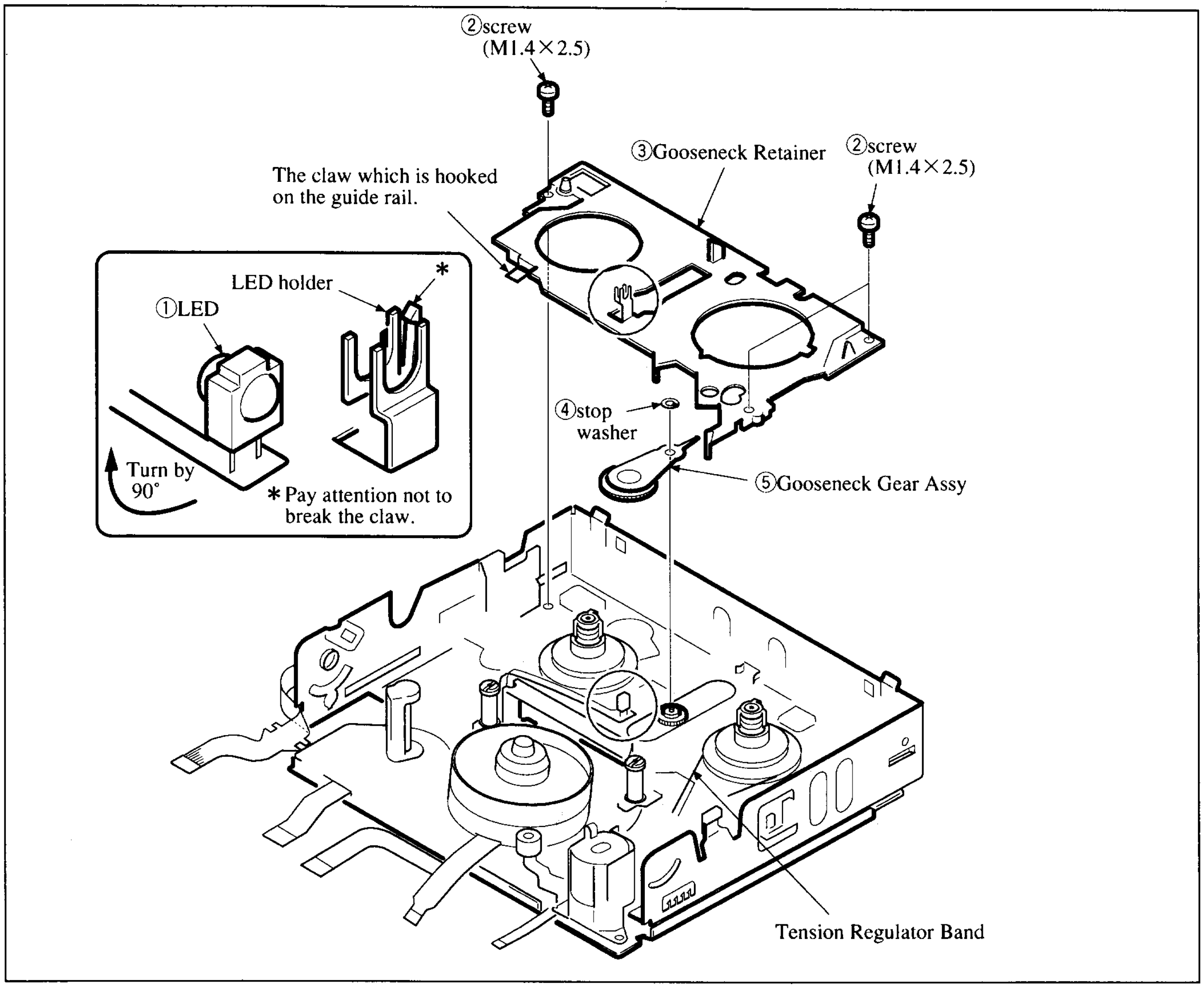

②screw
(M1.4×2.5)
③Gooseneck Retainer
②screw
(M1.4×2.5)
The claw which is hooked on the guide rail.
LED holder
*
①LED
Turn by 90°
* Pay attention not to break the claw.
④stop washer
⑤Gooseneck Gear Assy
Tension Regulator Band

Fig. 8

3-5. LS Chassis Block Assy, Mechanical Chassis Block Assy (Refer to Fig. 9)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the FP-221 flexible board ① from the flexible board holder.
4) Remove the stop ring E1.5 ②.
5) Remove the two screws (M 1.4×2.5) ③ and remove the LS Chassis Block Assy ④ from the Mechanical Chassis Block ⑤ in the direction of the arrow Ⓐ.

Note: The Tension Regulator Plate (2) can easily fall into the Mechanical Chassis Block Assy. Take care not to drop it.

2. Precautions During Re-Assembly

1) Before attaching the LS Chassis Block Assy, confirm that the respective phase-determining holes have been adjusted for correct phase. Also confirm that the specified locations of the Mechanical Chassis Block Assy and the LS Chassis Block Assy are coated with grease SG-055G (Ref. No. J-13). (Refer to Fig. a)
2) When attaching the LS Chassis Block Assy, insert the LS Cam Plate (on the LS chassis side) into the dowel (on the mechanical chassis side). Also insert the TG1 Cam Axis (on the LS chassis side) into the Tension Regulator Plate (2) (on the mechanical chassis side).
3) When attaching these block assemblies, attach them while pressing the TG-1 Arm Assy in the direction toward the TG-2 Guide. (Refer to Fig. b)
4) Pay attention that the TG-1 Arm is not floated.

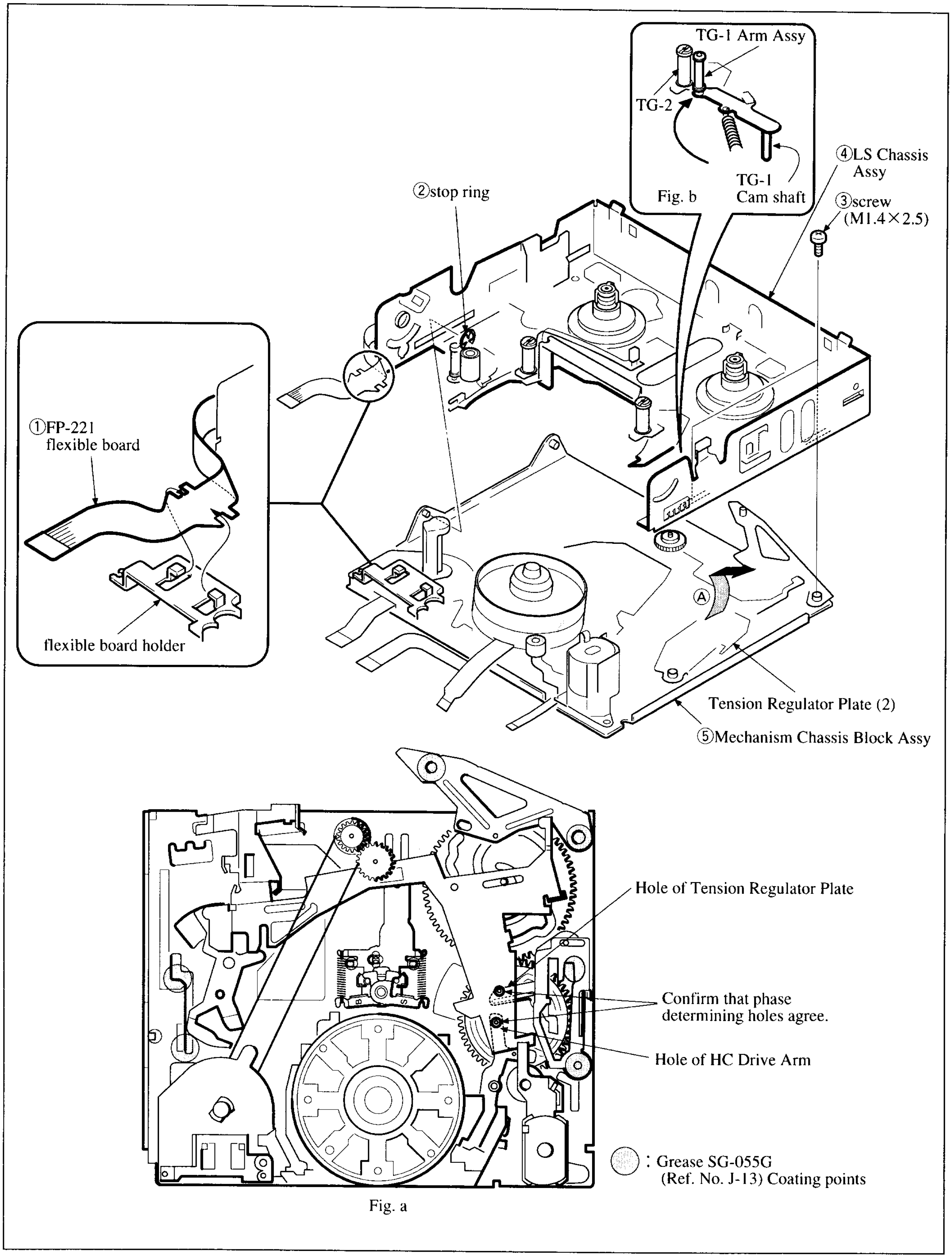

TG-1 Arm Assy
TG-2
TG-1
Cam shaft
Fig. b
④LS Chassis
Assy
③screw
(M1.4×2.5)
②stop ring
①FP-221
flexible board
flexible board holder
Ⓐ
Tension Regulator Plate (2)
⑤Mechanism Chassis Block Assy
Hole of Tension Regulator Plate
Confirm that phase
determining holes agree.
Hole of HC Drive Arm
: Grease SG-055G
(Ref. No. J-13) Coating points
Fig. a

Fig. 9

- **PARTS CONSTITUTING THE LS CHASSIS.**

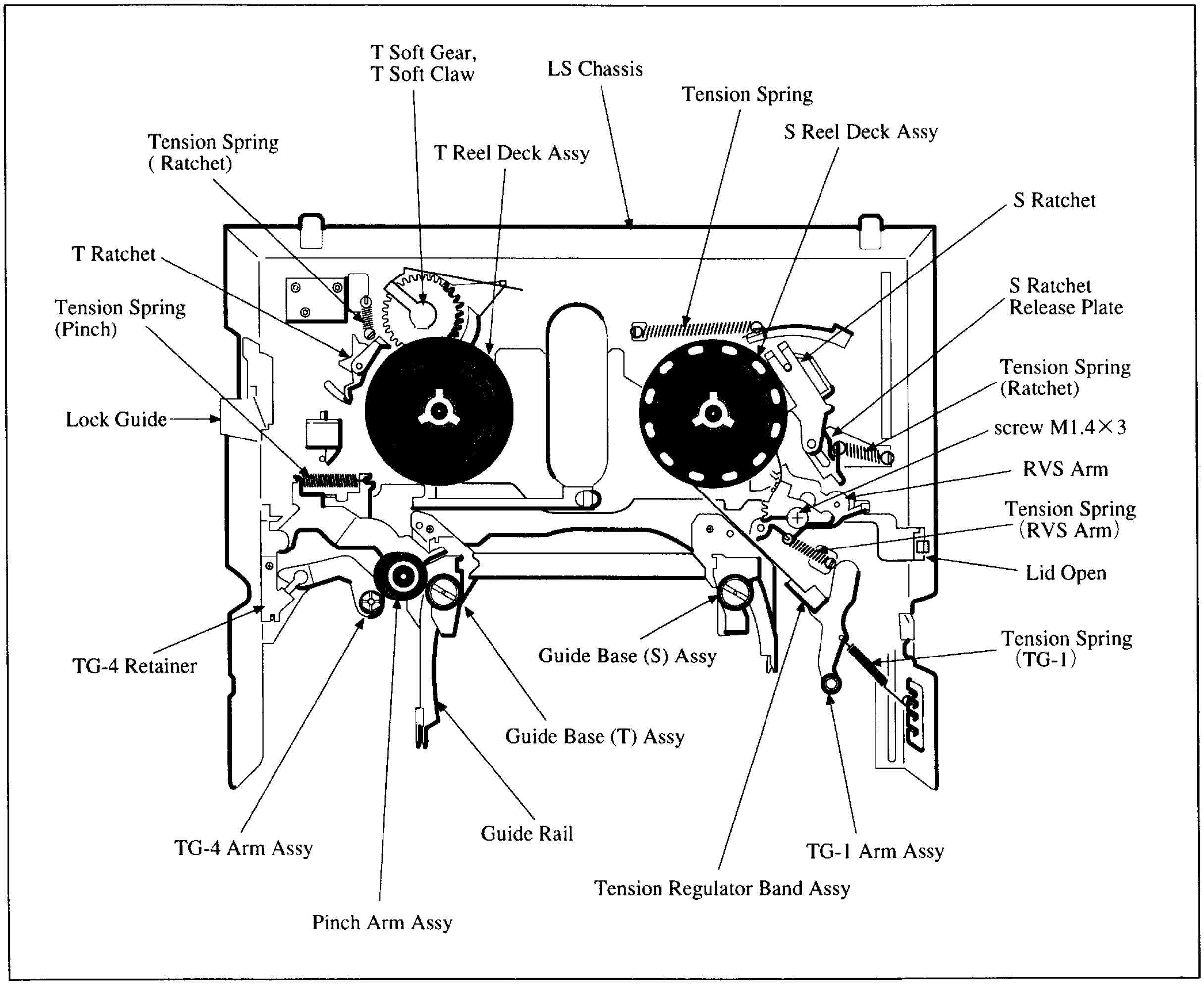

T Soft Gear,
T Soft Claw
LS Chassis
Tension Spring
S Reel Deck Assy
Tension Spring
(Ratchet)
T Reel Deck Assy
S Ratchet
T Ratchet
S Ratchet
Release Plate
Tension Spring
(Pinch)
Tension Spring
(Ratchet)
Lock Guide
screw M1.4×3
RVS Arm
Tension Spring
(RVS Arm)
Lid Open
Tension Spring
(TG-1)
TG-4 Retainer
Guide Base (S) Assy
Guide Base (T) Assy
Guide Rail
TG-4 Arm Assy
TG-1 Arm Assy
Tension Regulator Band Assy
Pinch Arm Assy

Fig. 10

3-6. T Reel Table Assy, T Ratchet, T Soft Gear Block Assy (Refer to Fig. 11)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the claw of the T Reel Deck Assy ① from the chassis and remove the T Reel Deck Assy from its shaft.
4) Remove the Tension Spring (Ratchet) ② from the LS Chassis and turn the T Ratchet ③ in the direction of the arrow Ⓐ and remove it .
5) Turn the T Soft Gear Block Assy ④ in the direction of the arrow Ⓑ and remove it .

2. Precautions During Re-Assembly

1) Confirm that the protrusions of both the T Soft Gear Block Assy and T Ratchet are securely locked to the LS Chassis.
2) Be careful not to deform the claw.

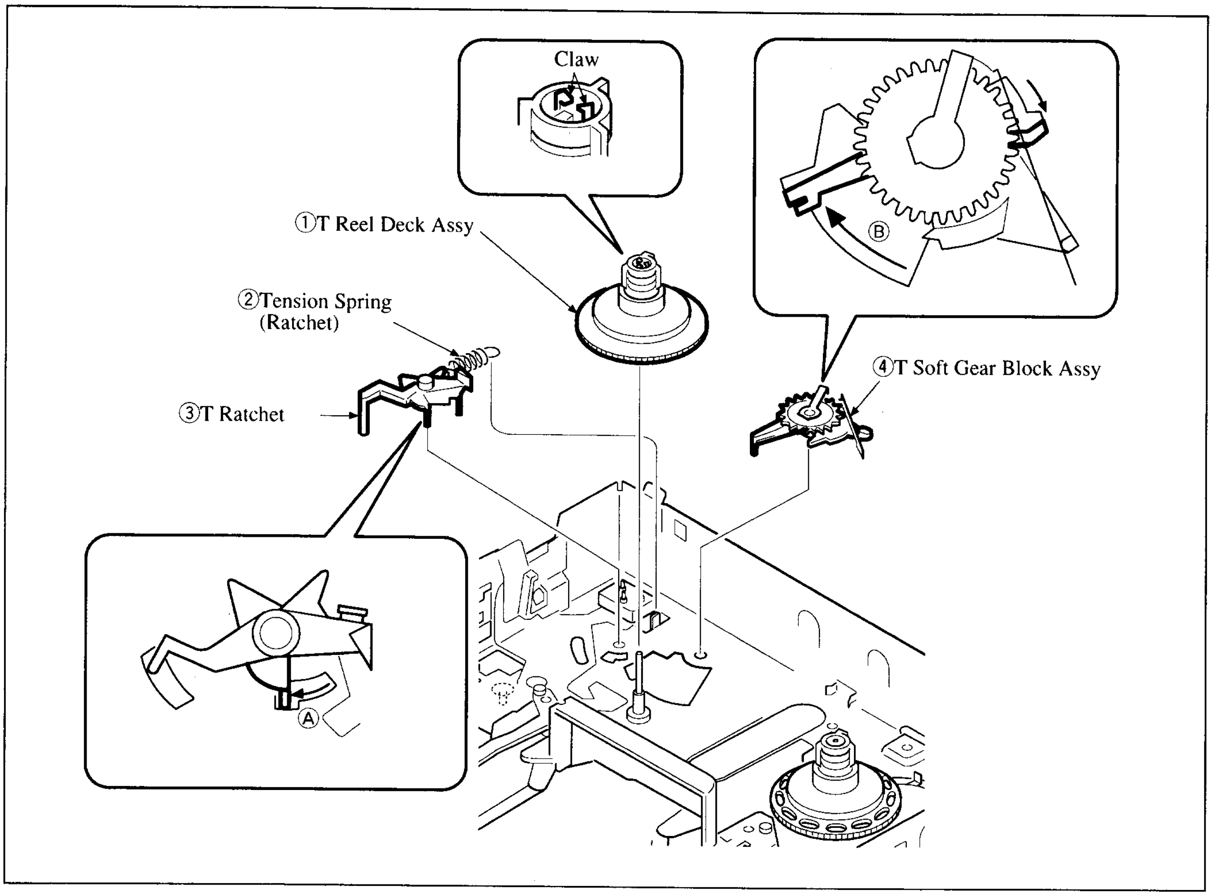


Fig. 11

3-7. Tension Regulator Band Assy, TG1 Arm Assy, S Reel Table Assy, S Ratchet, S Ratchet Release Plate, RVS Arm (Refer to Fig. 12)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the Tension Spring (TG1) ① from the LS Chassis.
4) Remove the screw (M 1.4×3) ② and remove the Tension Adjustment Block of the Tension Regulator Band Assy ④ form RVS Arm.
5) Release the S Ratchet ⑥ in the direction of the arrow Ⓐ and remove the Tension Regulator Band (while taking care not to bend the band) from the S Reel.
6) Remove the TG1 Arm Assy ③ from the LS Chassis, then remove the claw of the Tension Regulator Band Assy ④. (Refer to Fig. a)
7) Remove the claw of the S Reel Deck Assy ⑤ from the chassis and remove the S Reel Deck Assy from its shaft.
8) Remove the S Ratchet ⑥. (Because it is press-fitted, insert tip of screwdriver into the center of rotation and remove it.
9) Remove the Tension Spring (ratchet) ⑦ from the LS Chassis and remove the S Ratchet Release Plate ⑧.
10) Remove the Tension Spring ⑨ from the LS Chassis and remove the RVS Arm ⑩ by turning it..

2. Precautions During Re-Assembly

1) Confirm that the dowel of the S Ratchet Release Plate is inserted into the groove of the S ratchet and confirm that the center of the ratchet is press-fitted into bottom of the shaft. (It can be used again.)
2) When attaching the Tension Regulator Band Assy, take care not to bend it.
3) Pay attention that oil or grease is not spit on the surface of the Tension Regulated Band. (Pay attention also not to touch it with hand directly.)
4) Confirm that the tension regulator band is correctly inserted into the groove of the S Reel Deck Assy ⑤. (Refer to Fig. b)
5) When securing the Tension Adjustment Block using the screw, press it toward the position which gives the least tension, then tighten the fixing screw.
6) Before attaching the TG1 Arm Assy, coat the LS Chassis TG1 boss with oil (1/2 drop).
7) Do not touch the tape guide of the TG1 Arm Assy with bare hands.
8) Confirm that the claw of the S Reel Deck Assy is not deformed.

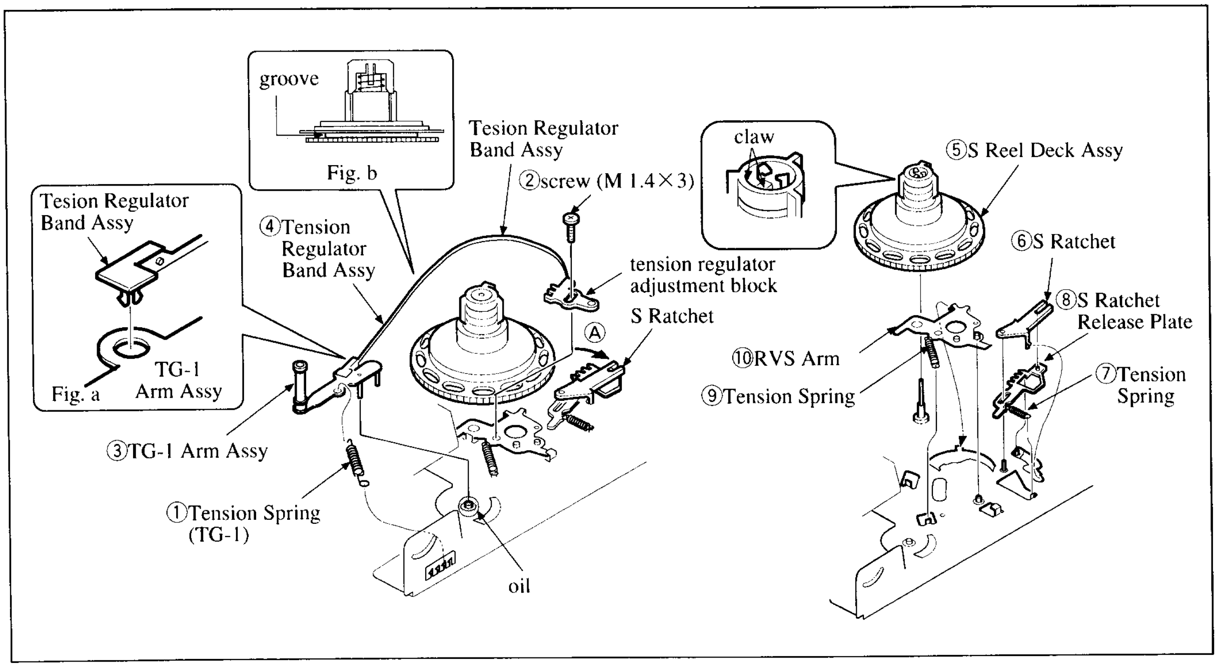

groove
Fig. b
Tesion Regulator Band Assy
②screw (M 1.4×3)
claw
⑤S Reel Deck Assy
⑥S Ratchet
Tesion Regulator Band Assy
④Tension Regulator Band Assy
tension regulator adjustment block
S Ratchet
Ⓐ
⑧S Ratchet Release Plate
⑩RVS Arm
⑨Tension Spring
⑦Tension Spring
TG-1 Arm Assy
Fig. a
③TG-1 Arm Assy
①Tension Spring (TG-1)
oil

Fig. 12

3-8. Pinch Arm Assy, TG4 Arm Block Assy (Refer to Fig. 13)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) Remove the Torsion Spring (pinch) ① from an end of Pinch Arm and hook it on the cut-out Ⓐ of the LS Chassis.
5) Remove the screw (M 1.4×2.5) ② and remove the TG4 Retainer ③.
6) Remove the TG4 Arm Block Assy ④ and remove the Torsion Spring ⑤ while paying attention to the Torsion Spring ⑤.
7) Remove the Pinch Arm Assy ⑥. (Caution: The Pinch Press Roller is easy to drop. Pay attention not to drop it.)
8) Remove the Torsion Spring (pinch) ① from the cut-out of the LS Chassis in the order of Ⓐ then Ⓑ.

2. Precautions During Re-Assembly

1) Before attaching these parts, coat the LS chassis pinch arm boss and TG4 arm boss with grease SG-055G (Ref. No. J-13).
2) Do not touch the tape guide of the TG4 Arm Block Assy and roller of the Pinch Arm Assy with bare hand.
3) After coating the Pinch Press Shaft of the Pinch Arm Assy ③ with grease SG-055G (Ref. No. J-13), attach the Pinch Press Roller.

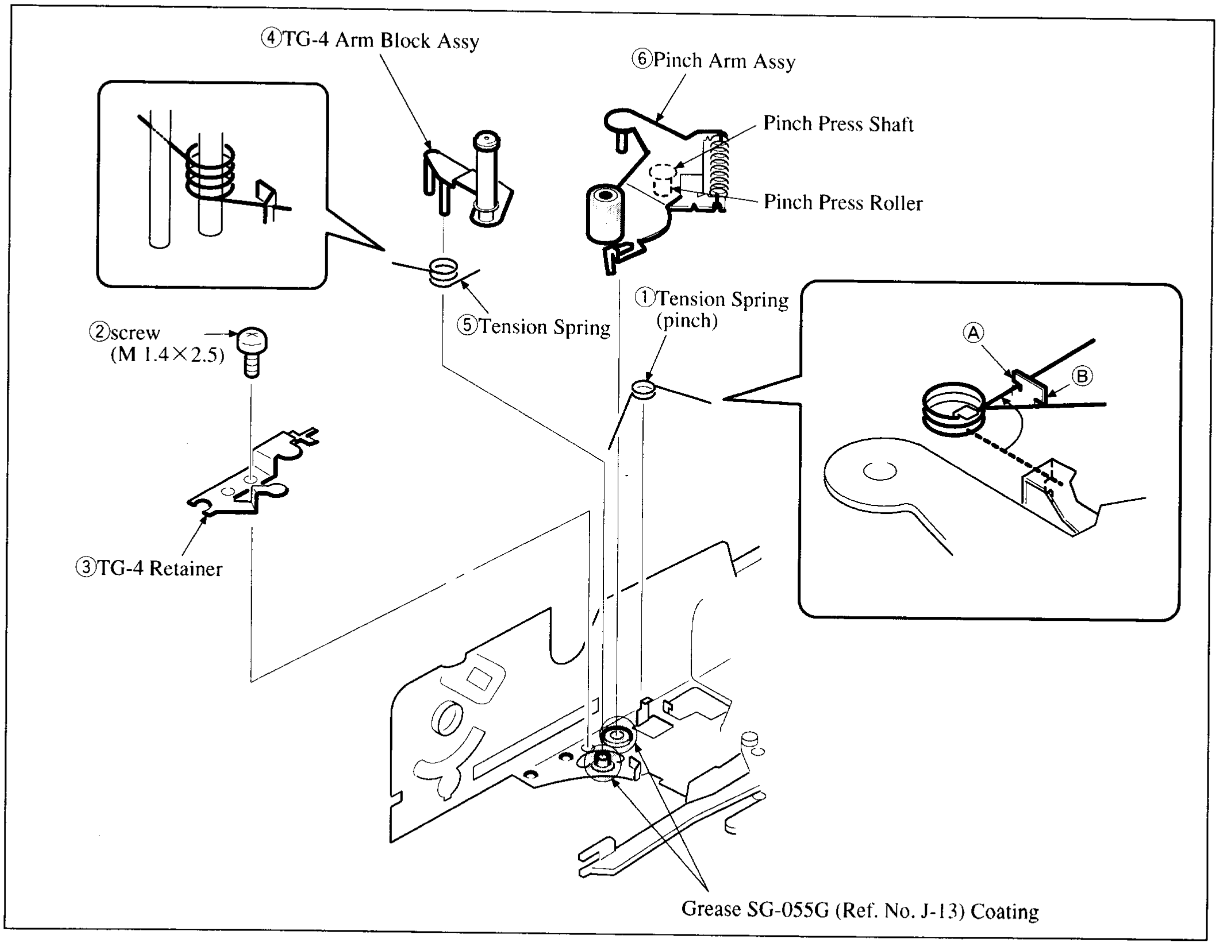

④TG-4 Arm Block Assy
⑥Pinch Arm Assy
Pinch Press Shaft
Pinch Press Roller
⑤Tension Spring
①Tension Spring (pinch)
②screw (M 1.4×2.5)
③TG-4 Retainer
Ⓐ
Ⓑ
Grease SG-055G (Ref. No. J-13) Coating

Fig. 13

3-9. LS Cam Plate, LS Guide Cover, Lid Opener, EJ Arm, Lock Guide (Refer to Fig. 14)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) Remove the two screws (M 1.4×2.5) ① and remove the the LS Cam Plate ②.
   In this state, write a mark on the screw ① and on the LS Chassis indicating the position of the LS Cam Plate which helps during re-assembly.
5) Remove the LS Guide Cover ③.
6) Remove the Lock Guide ④ in the upward direction. (Refer to Fig. a)
7) Remove the Lid Open ⑤ in the direction of the arrow Ⓒ while pushing Ⓑ portion .
8) Remove the EJ Arm ⑥ . (The EJ Arm ⑥ is press-fitted. If the EJ Arm ⑥ is not damaged, it is not necessary to replace.)

2. Precautions During Re-Assembly

1) After the captioned parts are attached, confirm that the respective claws and dowels are engaged completely.
2) If the EJ Arm ⑥ is removed, be sure to replace it with the new replacement EJ Arm.
3) If any mark is not written when removing the LS Cam Plate ②, adjust and attack it as shown in Fig. b.

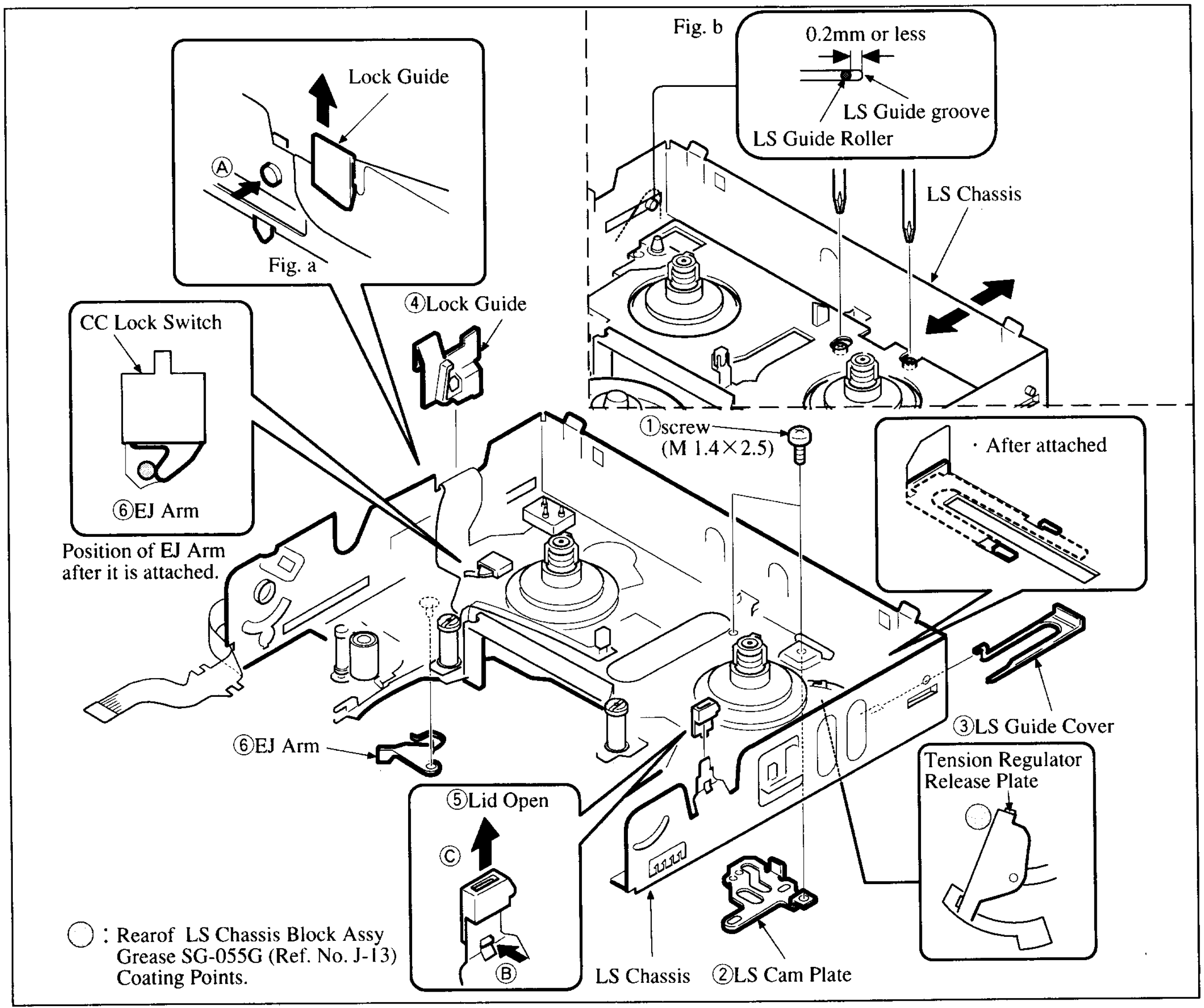

Lock Guide
Ⓐ
Fig. a
④Lock Guide
CC Lock Switch
⑥EJ Arm
Position of EJ Arm after it is attached.
Fig. b
0.2mm or less
LS Guide groove
LS Guide Roller
LS Chassis
①screw (M 1.4×2.5)
· After attached
③LS Guide Cover
Tension Regulator Release Plate
⑥EJ Arm
⑤Lid Open
Ⓒ
Ⓑ
LS Chassis
②LS Cam Plate
○ : Rearof LS Chassis Block Assy Grease SG-055G (Ref. No. J-13) Coating Points.

Fig. 14

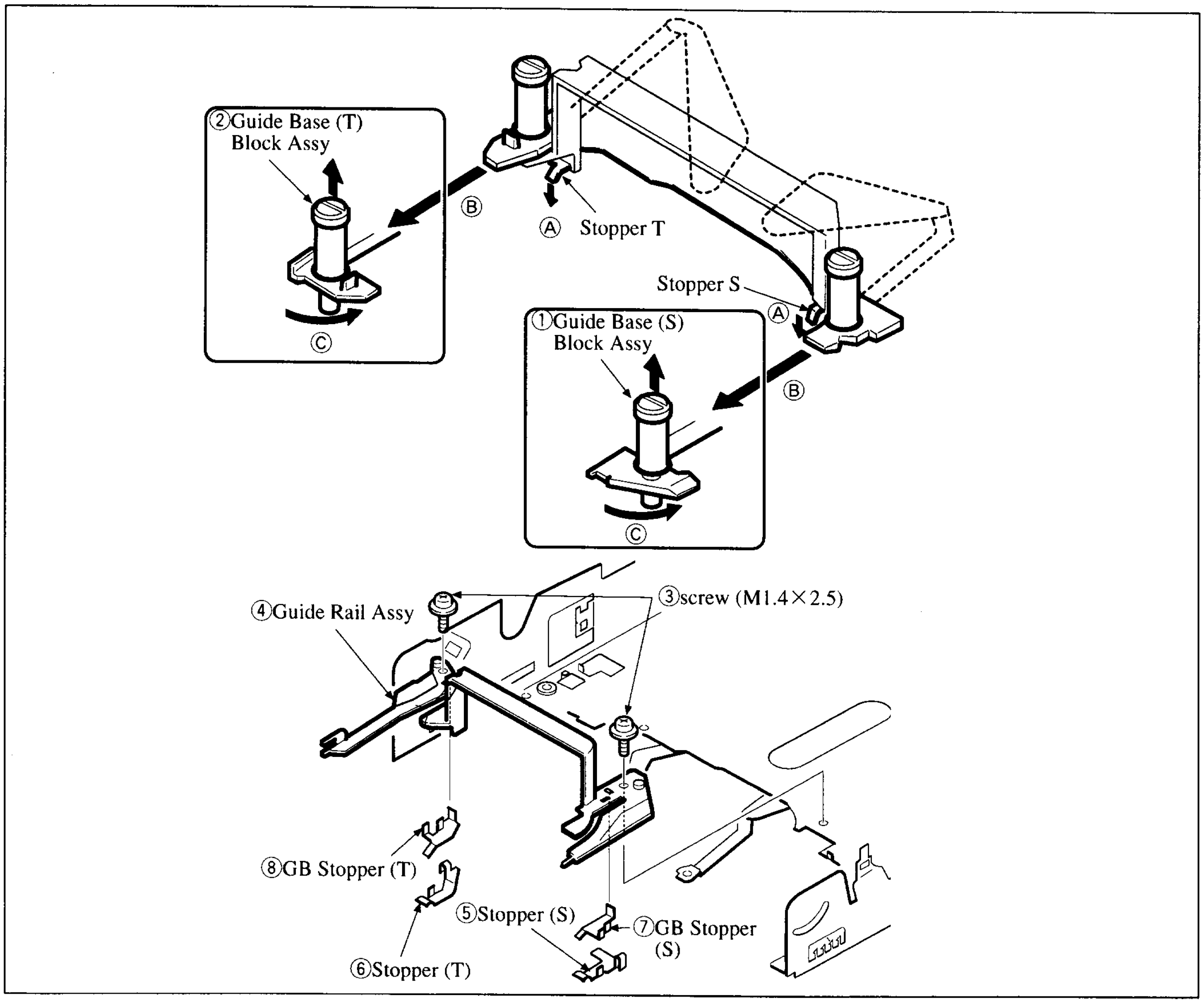
3-10. Guide Base (S) and (T) Block Assemblies, Guide Rail (Refer to Fig. 15)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) While pushing the GB Stoppers (S) and (T) in the direction of arrow Ⓐ, press the guide arm in the direction of the arrow Ⓑ, and turn the Guide Base (S) and (T) Block Assemblies : ① and ② in the direction of the arrow Ⓒ respectively, and remove them.
5) Remove the two screws (M 1.4×2.5) ③ and remove the the Guide Rail Assy ④.
6) Remove the Stopper (S) and (T) : ⑤ and ⑥, then remove the GB Stopper S and T: ⑦ and ⑧.

2. Precautions During Re-Assembly

1) Pay attention not to deform the Guide Rail.
2) Do not touch the tape guide of the Guide Base (S) and (T) Block Assemblies with bare hand.
3) Pay attention not to deform the Stoppers (S) and (T).
4) When attaching the Guide Base (S) and (T) Blocks to the Guide Rail, move back the Guide Bases until the GB Stoppers (S) and (T) are locked. ("Click" sounds.)
5) After the captioned parts are attached, perform section "4. TAPE PATH ADJUSTMENT".



②Guide Base (T)
Block Assy
Ⓒ
Ⓑ
Ⓐ Stopper T
Stopper S
Ⓐ
①Guide Base (S)
Block Assy
Ⓑ
Ⓒ
④Guide Rail Assy
③screw (M1.4×2.5)
⑧GB Stopper (T)
⑤Stopper (S)
⑦GB Stopper
(S)
⑥Stopper (T)

Fig. 15

- **PARTS CONSTITUTING THE MECHANISM CHASSIS**

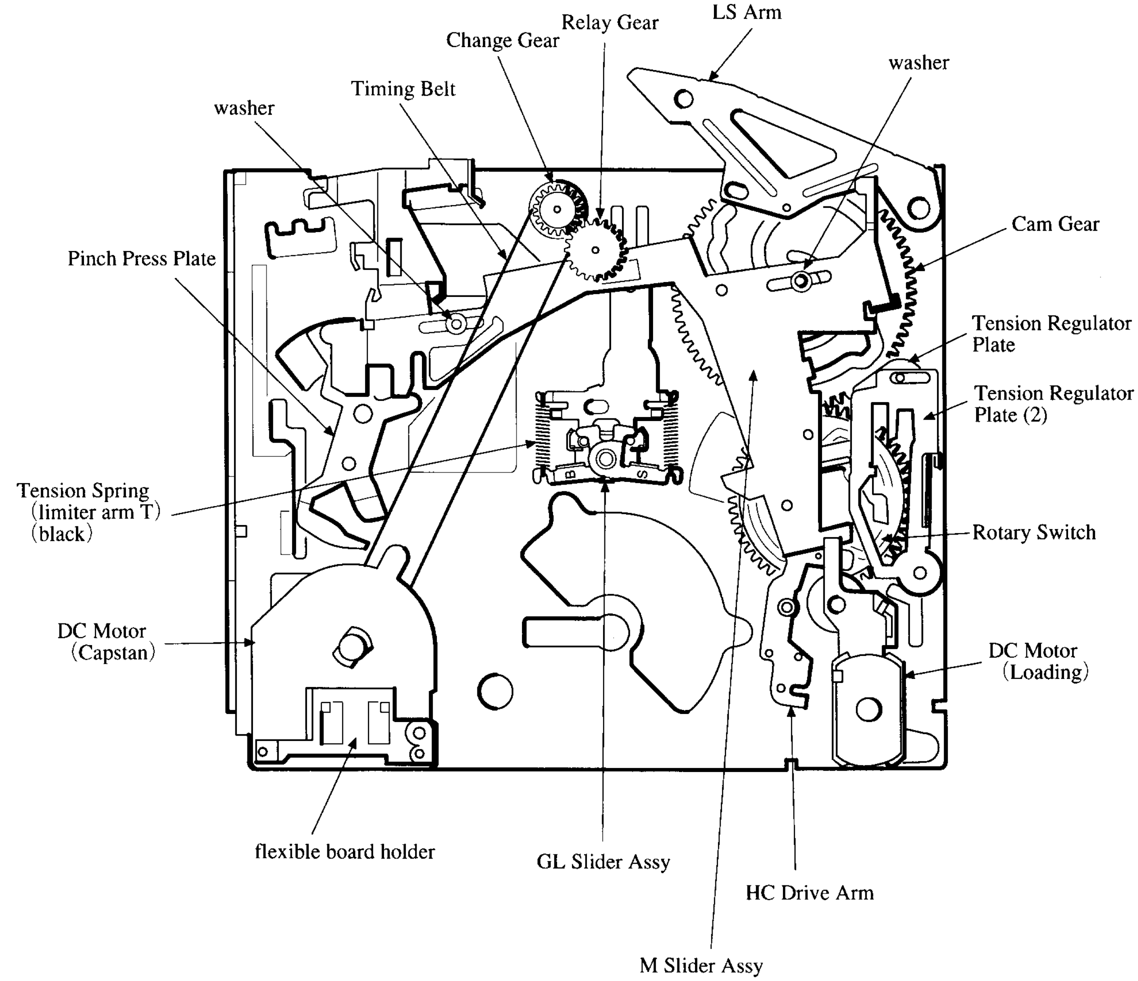

Relay Gear
LS Arm
Change Gear
washer
Timing Belt
washer
Cam Gear
Pinch Press Plate
Tension Regulator Plate
Tension Regulator Plate (2)
Tension Spring (limiter arm T) (black)
Rotary Switch
DC Motor (Capstan)
DC Motor (Loading)
flexible board holder
GL Slider Assy
HC Drive Arm
M Slider Assy

Fig.16

3-11. DC Motor Assy (Loading)
(Refer to Fig. 17)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove soldering from the Ⓐ portion.
8) Remove the screw (M 1.4×2.5) ① and remove the Motor Holder Block Assy ② from the mechanism chassis along with the claw beneath the Motor Holder Block Assy as shown by the arrow Ⓑ.
9) Remove the Motor Shield ③ in the direction of the arrow Ⓒ (by opening the two ★ star marked points).
10) Release the claw on top of the Motor Holder ⑤ and remove the DC Motor Assy ④ in the direction of the arrow Ⓓ.
11) Remove the Motor Holder Sleeve ⑥, Gear A⑦ and Worm Shaft ⑧ in this order.

2. Precautions During Re-Assembly

1) Before attaching the Gear A ⑥, coat the Retainer Shaft Ⓔ with grease SG-055G (Ref. No. J-13).
2) After assembling the Motor Holder Block Assy, coat the six locations shown by Fig. a with grease SG-055G (Ref. No. J-13).
3) The HC Drive Arm is easy to drop. Confirm that it is attacked referring to Fig. 19.

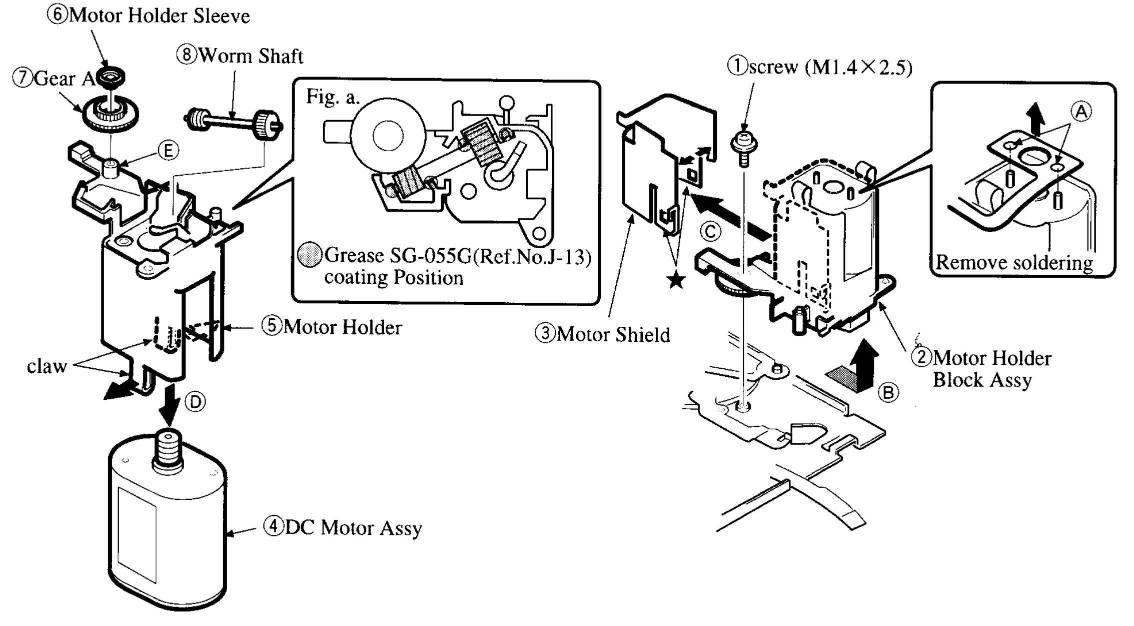

⑥Motor Holder Sleeve
⑧Worm Shaft
⑦Gear A
Ⓔ
Fig. a.
●Grease SG-055G(Ref.No.J-13)
coating Position
⑤Motor Holder
claw
Ⓓ
④DC Motor Assy
①screw (M1.4×2.5)
Ⓒ
★
③Motor Shield
Ⓐ
Remove soldering
②Motor Holder
Block Assy
Ⓑ

Fig. 17

3-12. Tension Regulator Plate 2, Relay Gear, M Slider Assy (Refer to Fig. 18)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC motor referring to section 3-11.
8) Remove the Tension Regulator Plate 2 ①.
9) Remove the Relay Gear ②.
10) Remove the two washers ③. Remove the M Slider Assy ④. At the point, confirm that the LS Roller ⑤ is not dropped.

2. Precautions During Re-Assembly

1) Before attaching the M Slider Assy ④, coat the LS Roller Shaft Ⓐ on the back of the M Slider Assy, the Pinch Press Plate Shaft Ⓑ and the mechanism chassis M Slider Axis Ⓒ with grease SG-055G (Ref. No. J-13). (Refer to Fig. b)
2) While confirming the phase-determining holes, attach the M Slider Assy ④ while paying attention to the claw.
3) Attach the Tension Regulator Plate 2 ① inside the Tension Regulator Plate. (Refer to the asterisk * Marked portion of Fig. a)
4) Before attaching the Relay Gear ②, coat the mechanism chassis Relay Gear Axis Ⓓ with grease SG-055G (Ref. No. J-13).

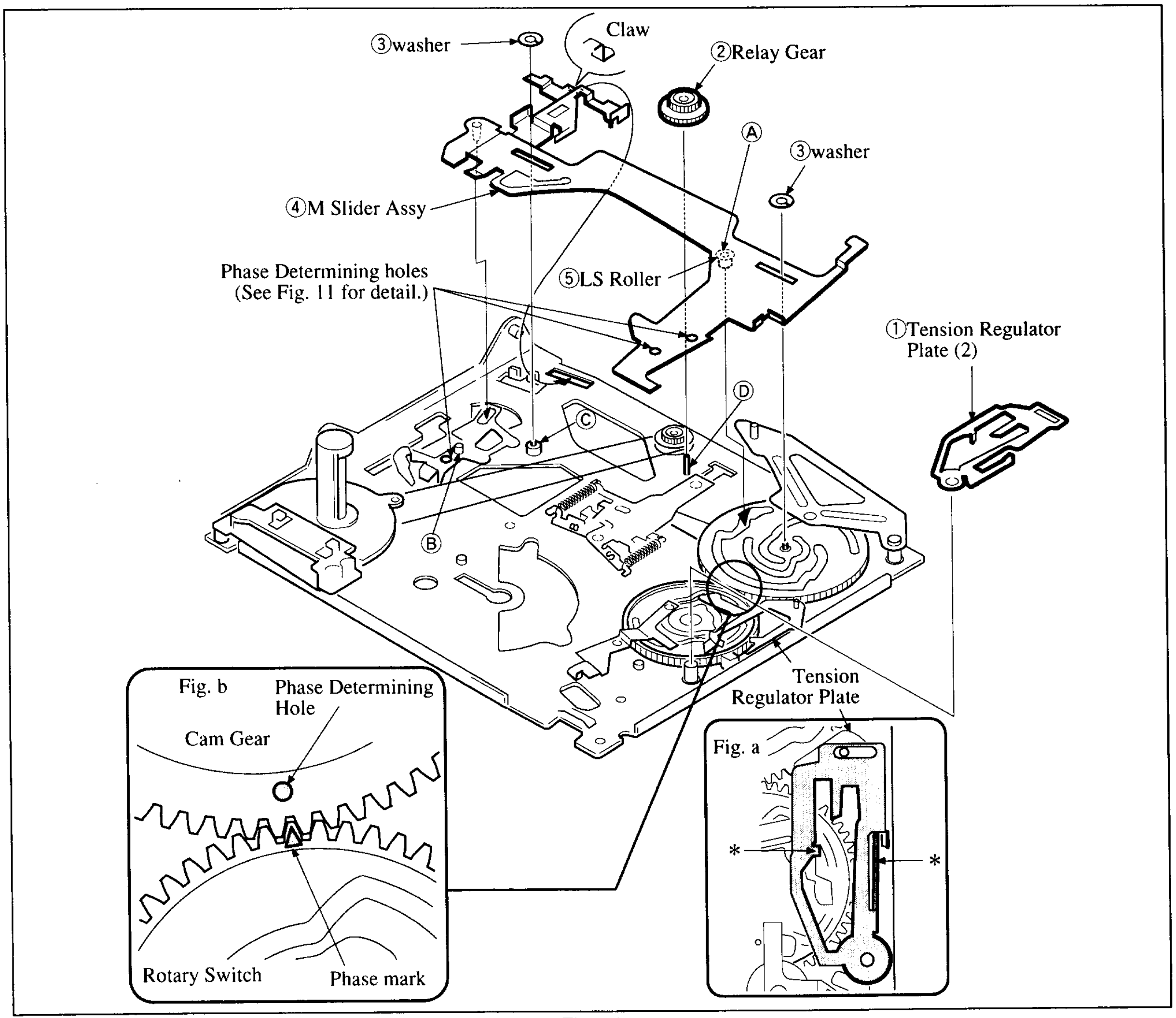

③washer
Claw
②Relay Gear
Ⓐ
③washer
④M Slider Assy
Phase Determining holes
(See Fig. 11 for detail.)
⑤LS Roller
①Tension Regulator Plate (2)
Ⓓ
Ⓒ
Ⓑ
Tension Regulator Plate
Fig. b
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
Fig. a
*
*

Fig. 18

3-13. LS Arm, HC Drive Arm, Pinch Press Plate, Tension Regulator Plate (Refer to Fig. 19)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm ①. At this point, confirm that the LS Roller ② is not dropped.
10) Remove the HC Drive Arm ③, Pinch Press Plate ④ and Tension Regulator Plate ⑤.

2. Precautions During Re-Assembly

1) Before attaching the captioned parts, confirm that phases of the Cam Gear and the Rotary Switch agree. (See Fig. a.)
2) Insert the dowel of the Tension Regulator Plate ⑤ into the groove outside the rotary switch.
3) Before attaching the Pinch Press Plate ④, check for grease on the mechanism chassis Pinch Press Plate Shaft Ⓐ. If grease cannot be found, coat it with grease SG-055G (Ref. No. J-13). After attaching the Pinch Press Plate ④, align its phase hole until it agrees with the phase-determining hole on the mechanism chassis.
4) Insert the dowel of the HC Drive Arm ③ into the groove inside the rotary switch.
5) Before attaching the LS Arm ①, coat the LS roller shaft of the LS Arm ① with grease SG-055G (Ref. No. J-13).

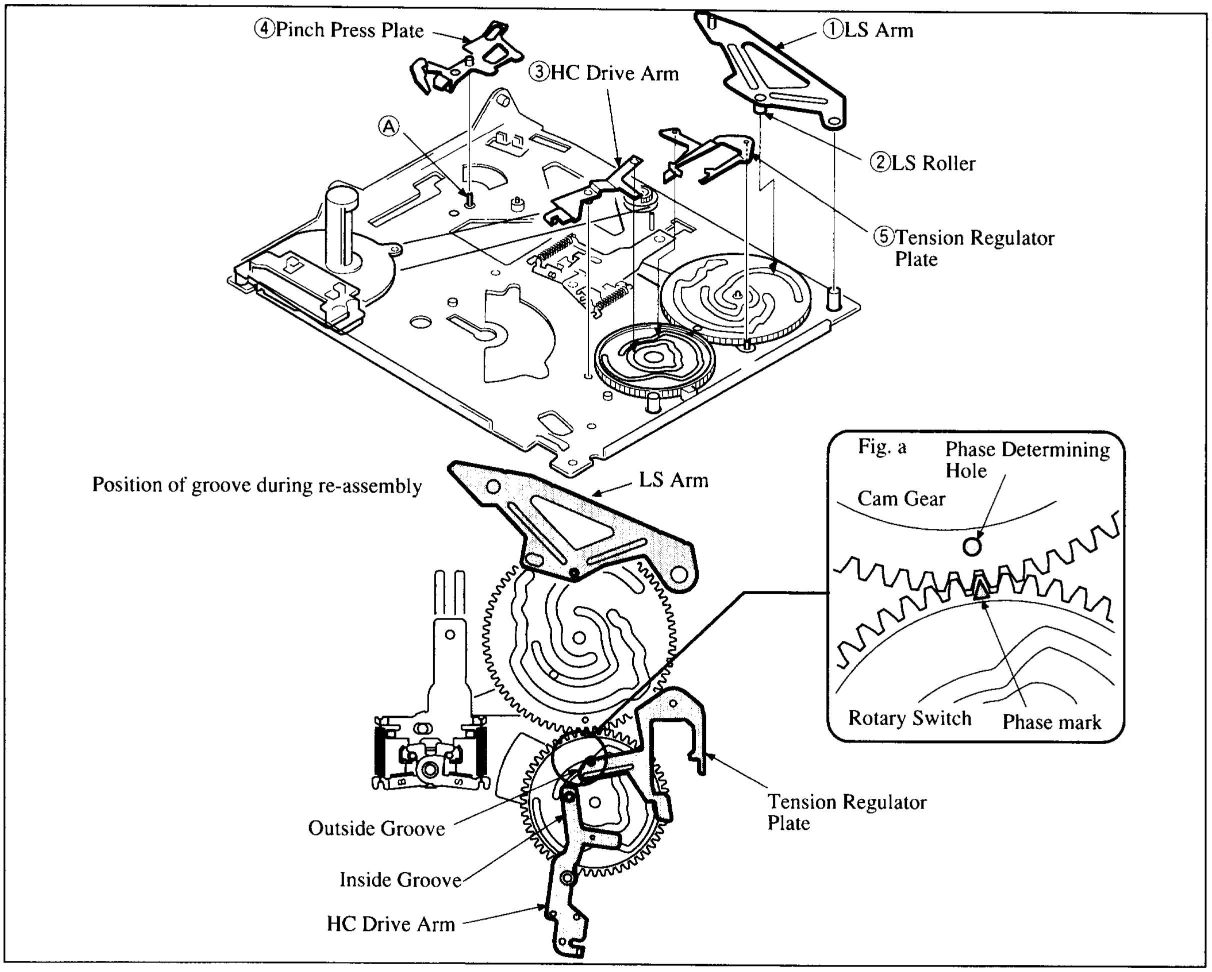

④Pinch Press Plate
③HC Drive Arm
①LS Arm
Ⓐ
②LS Roller
⑤Tension Regulator Plate
Position of groove during re-assembly
LS Arm
Fig. a
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
Tension Regulator Plate
Outside Groove
Inside Groove
HC Drive Arm

Fig. 19

3-14. Cam Gear (Refer to Fig. 20)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm and Tension Regulator Plate referring to section 3-13.
10) Remove the Cam Gear ①.

2. Precautions During Re-Assembly

1) Before attaching the Cam Gear ①, align the phase mark on the rotary switch until it agrees with the phase-determining hole Ⓐ on the mechanism chassis, and align the GL Arm's phase mark Ⓑ until it agrees with the phase-determining hole Ⓐ on the mechanism chassis. Coat the mechanism's chassis Gear Axis Ⓐ with grease SG-055G (Ref. No. J-13).
2) Attach the Cam Gear ① so that its phase hole agrees with the phase mark on the rotary switch. (Refer to Fig. a)
3) After the Cam Gear ① is attached, coat the GL Arm Axis Block of the cam gear with grease SG-055G (Ref. No. J-13).

Reference : The phase marks of the Cam Gear and Rotary Switch can also be checked from the rear side of mechanism chassis. It means that the phase can be confirmed after mechanism deck is fully re-assembled.

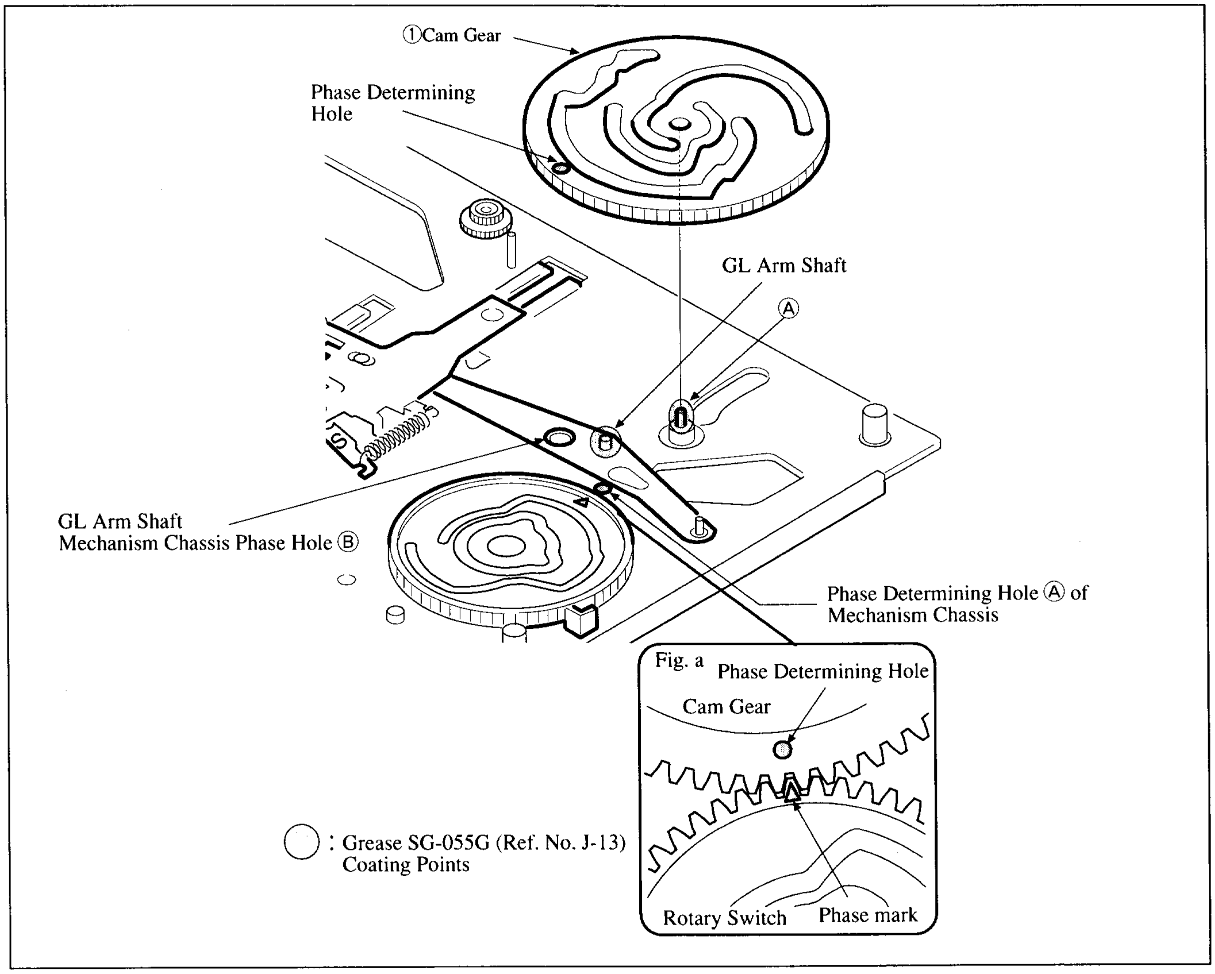

①Cam Gear
Phase Determining Hole
GL Arm Shaft
Ⓐ
GL Arm Shaft
Mechanism Chassis Phase Hole Ⓑ
Phase Determining Hole Ⓐ of Mechanism Chassis
Fig. a
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
○ : Grease SG-055G (Ref. No. J-13) Coating Points

Fig. 20

3-15. GL Slider Assy, GL Arm (Refer to Fig. 21)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm and Tension Regulator Plate referring to section 3-13.
10) Remove the Cam Gear referring to section 3-14.
11) Remove the GL Slider Assy ① by sliding it in the direction of the arrow Ⓐ.
12) Remove the GL Arm ②.

2. Precautions During Re-Assembly

1) The Tension Spring T③ is colored black and the Tension Spring S④ is colored silver.
2) Coat the position shown in Fig. a of the GL Slider Assy ① with grease SG-055G (Ref. No. J-13).
3) Coat the four points Ⓑ where GL slider is attached on the mechanism chassis with grease SG-055G (Ref. No. J-13).
4) After attaching the GL Arm ② and the GL Slider Assy, align the GL arm phase hole until it agrees with the phase-determining hole on the mechanism chassis.

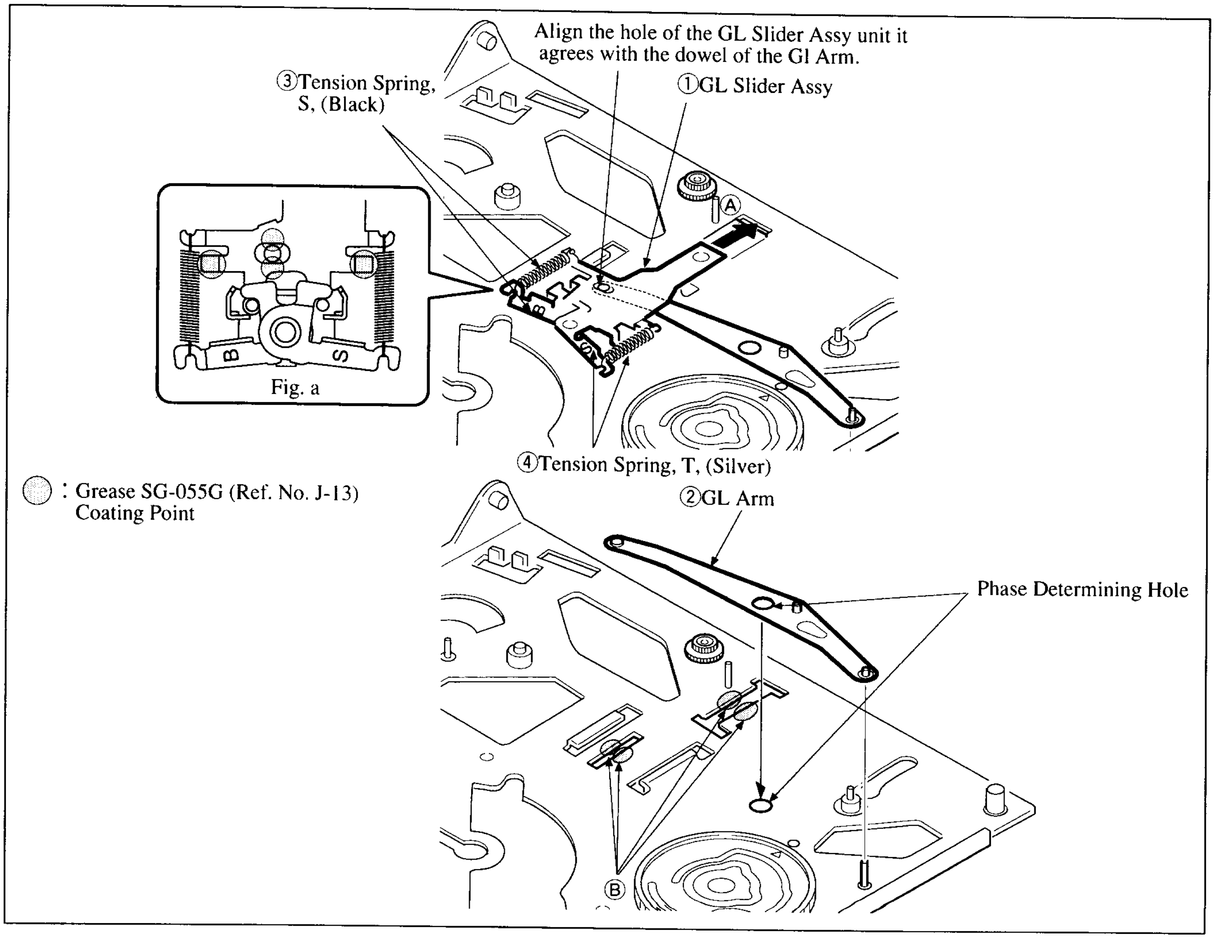

Align the hole of the GL Slider Assy unit it agrees with the dowel of the Gl Arm.
③Tension Spring, S, (Black)
①GL Slider Assy
Ⓐ
B
S
Fig. a
④Tension Spring, T, (Silver)
②GL Arm
Phase Determining Hole
Ⓑ
: Grease SG-055G (Ref. No. J-13) Coating Point

Fig. 21

3-16. Rotary Switch (Refer to Fig. 22)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm, Tension Regulator Plate, HC Drive Arm and Pinch Press Plate referring to section 3-13.
10) Remove the Cam Gear referring to section 3-14.
11) Remove soldering the portion Ⓐ on the rear of the Rotary Switch. (Pay attention at this moment that the GL Slider and GL Arm do not drop.)
12) While lifting up the portion Ⓑ about 1 mm (pay attention not to break it), hold the portion Ⓒ and turn it in the direction of the arrow Ⓓ to remove the Rotary Switch.

2. Precautions During Re-Assembly

1) Before attaching the Rotary Switch by soldering on the FP-220 board, insert the portion Ⓑ dowel into the hole on the mechanism chassis. Confirm that the three claws are engaged with the mechanism chassis.

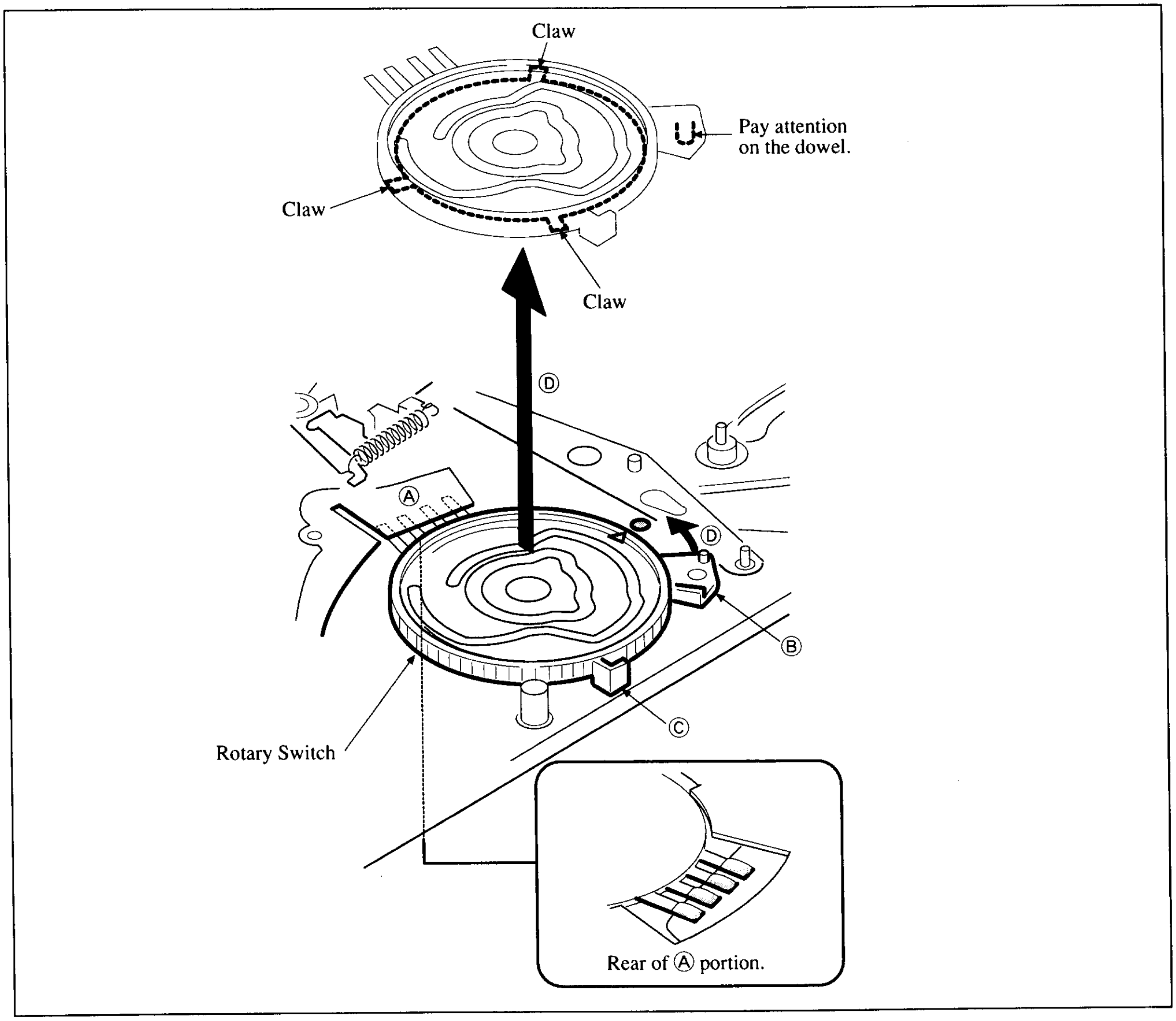


Fig. 22

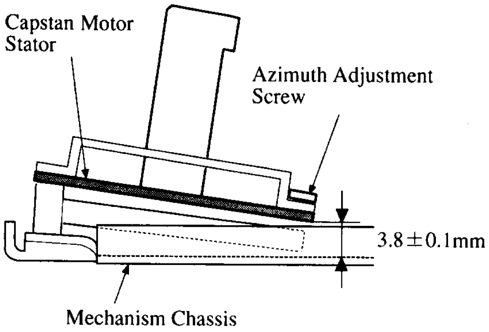
3-17. Capstan Motor (Refer to Fig. 23)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the Pinch Press Plate referring to section 3-13.
10) Remove the screw (M 1.4×6.7) ① and remove the Flexible Board Holder ②.
11) Remove the two screws (M 1.4×6.7) ③ and remove the Capstan Motor ④, Timing Belt ⑤ and Capstan Spacer ⑥.
12) Remove the washer ⑦ and remove the Changer Gear ⑧.

2. Precautions During Re-Assembly

1) Confirm that the timing belt is not twisted.
2) Do not touch the capstan with bare hand.
3) Lubricate the mechanism chassis's Change Gear shaft Ⓐ.
4) After attaching the Capstan Motor, perform the capstan azimuth adjustment.


Capstan Motor Stator
Azimuth Adjustment Screw
3.8±0.1mm
Mechanism Chassis

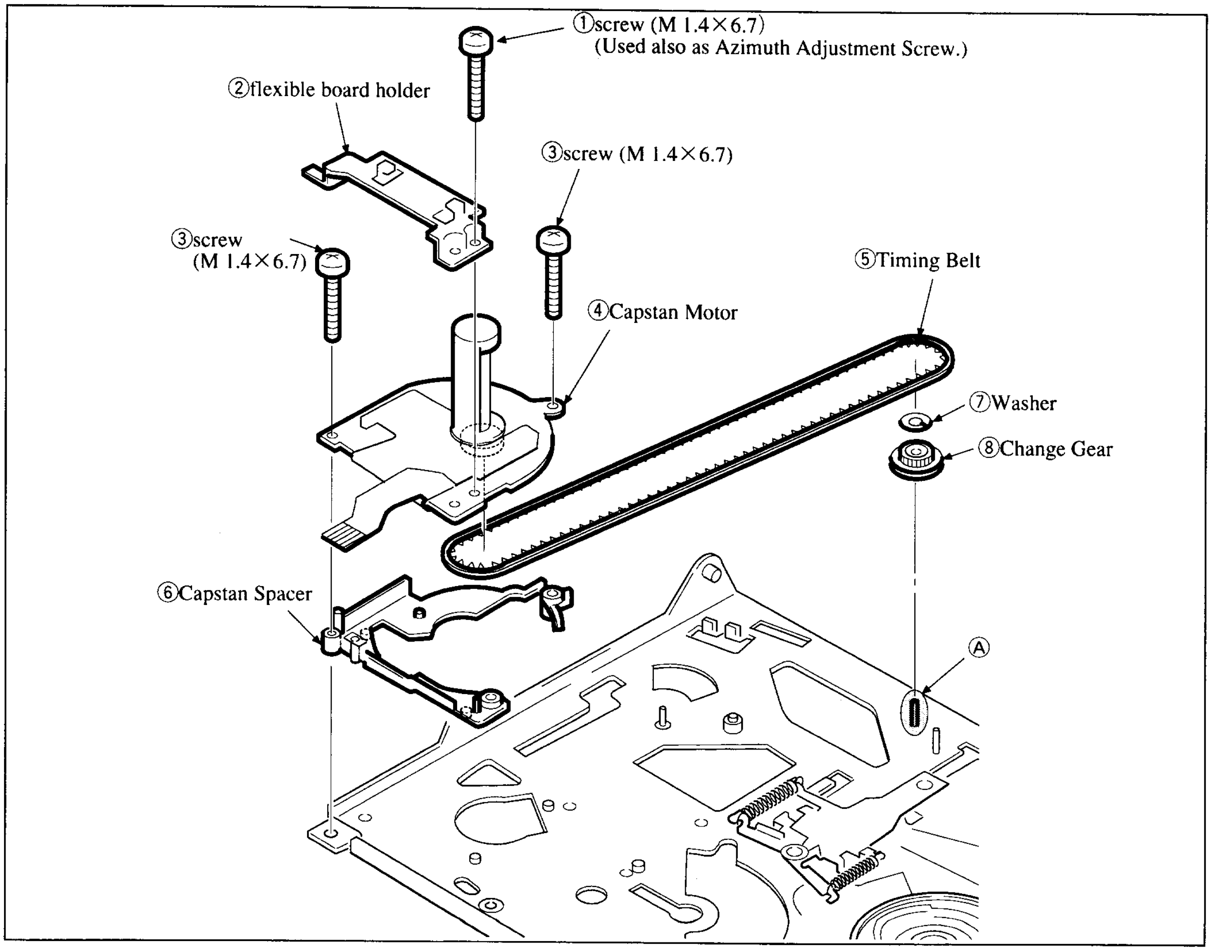

①screw (M 1.4×6.7)
(Used also as Azimuth Adjustment Screw.)
②flexible board holder
③screw (M 1.4×6.7)
③screw
(M 1.4×6.7)
⑤Timing Belt
④Capstan Motor
⑦Washer
⑧Change Gear
⑥Capstan Spacer
Ⓐ

Fig. 23

3-18. Tension Regulator Position Adjustment (Refer to Fig.24)

1. Adjustment Procedure

1) Insert a cassette Tape and run the Tape in PB mode.
2) While tape is running, confirm that the distance between the LS Chassis and TG-1 Guide's top flange is 8.3mm.
3) If not, proceed to step 4).
4) Loosen the screw ① (M 1.4×3).
5) If the TG-1 Guide is located inside the specified position, move position of the Tension Regulator Band Assy using the FWD B.T. Adjustment tool screwdriver (Ref. No. J-9) as shown in the direction of the arrow Ⓐ. If it is located outside, move it in the direction of the arrow Ⓑ.
6) Tighten the screw ① (M 1.4×3).

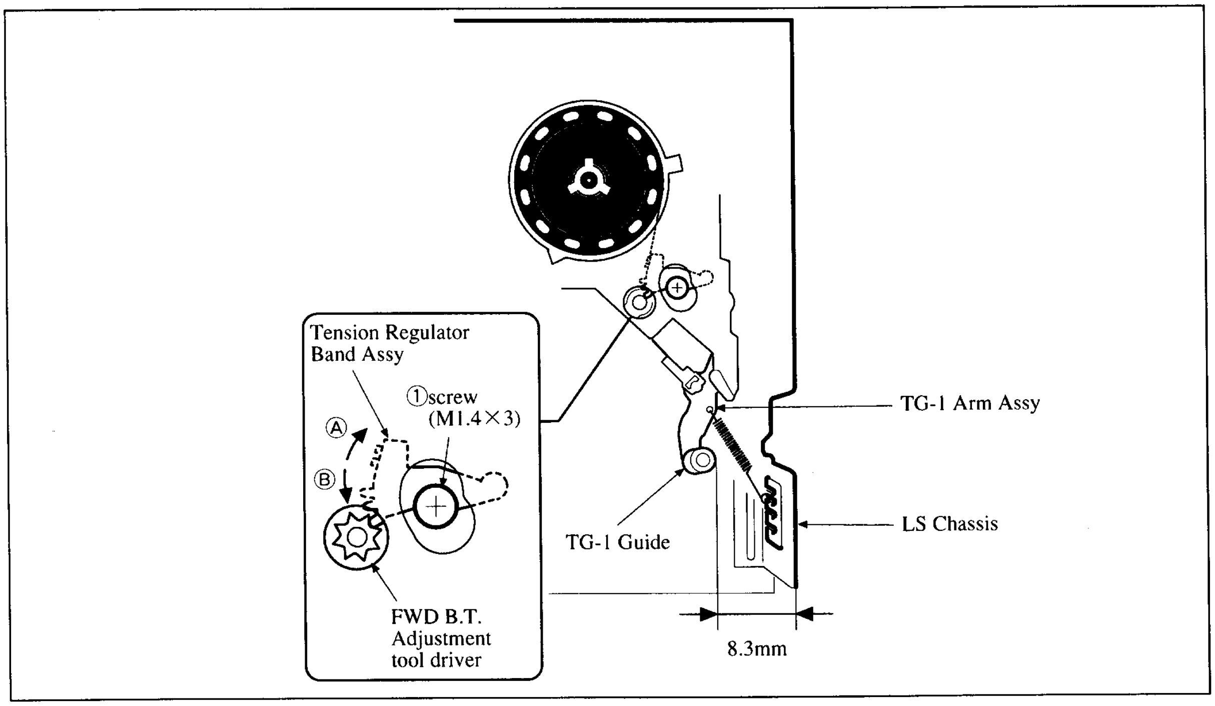

Tension Regulator Band Assy
①screw (M1.4×3)
Ⓐ
Ⓑ
FWD B.T. Adjustment tool driver
TG-1 Guide
TG-1 Arm Assy
LS Chassis
8.3mm

Fig.24

3-19. FWD Tape Hold-Back Tension Adjustment (Refer to Fig. 25)

1. Adjustment Procedure

1) Insert the torque measurement cassette to the machine.
2) Put the machine in the FWD mode. Confirm that the reading on the S side is in the range from 8.0 to 10.5 g•cm. If the reading is outside the specification range, make the following adjustments.
3) If the reading is higher than the specification, change the TG-1 Tension Spring to the side Ⓐ.
4) If the reading is lower than the specification, change the TG-1 Tension Spring to the side Ⓑ.

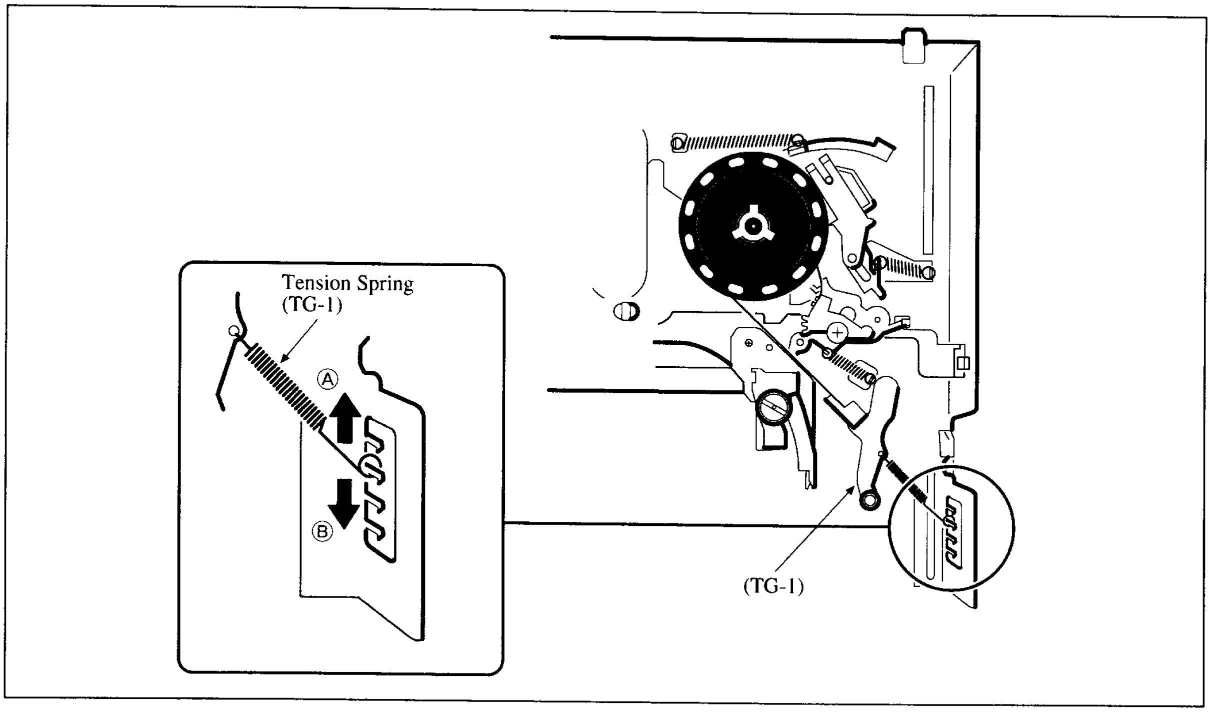


Fig. 25

4. TAPE PATH ADJUSTMENT

Purpose:	Adjusts the head linearity.
Adjustment Error:	Noise appears on top and bottom of display when playing back the tape recorded by other machines.

4-1. Preparations for Adjustments

1) Clean the tape running surface (tape guide, drum, capstan, pinch roller).
2) Connect the adjustment remote commander to the REMOTE terminal (JACK block).
3) Establish the PATH mode using the adjustment remote commander (Track Shift mode)* to cancel auto tracking.
4) Connect an oscilloscope.
   CH1: Test connector PB RF terminal
   External trigger: Test connector PB SWP terminal
5) Playback the tracking alignment tape WR5-1NP (NTSC) or WR5-1CP (PAL) (Ref. No. J-6).
6) Check to see that RF waveform is flat at input and exit sides on oscilloscope.
   If it not flat, perform the following section 4-2 until it is flat.
7) After completing the adjustment, release the PATH mode (Track Shift mode).*.

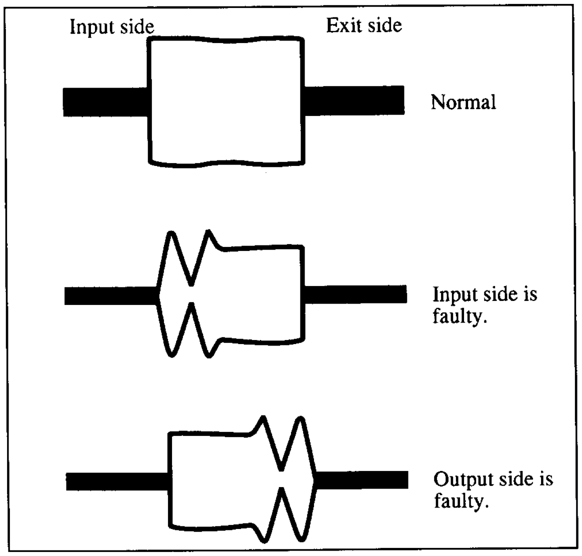


Fig. 26

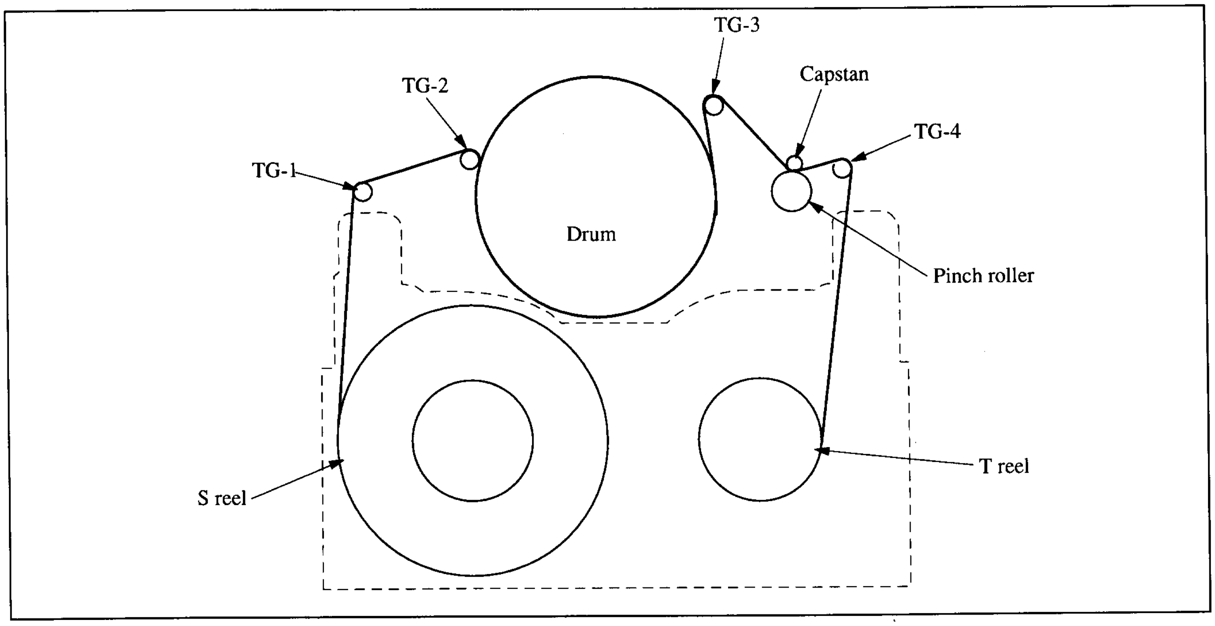


Fig. 27

* How to enter and exit the Track Shift mode. (In the case of CCD-TR420E/TR440E)

Entering the Track Shift mode

1. Select page : 6, address : 00 set data : 01 and press the PAUSE button.
2. Select page : 7, address : 01 set data : 03 and press the PAUSE button.

Exitting the Track Shift mode

1. Select page : 7, address : 01 set data : 00 and press the PAUSE button.
2. Select page : 6, address : 00 set data : 00 and press the PAUSE button.

4-2. Tracking Adjustment (Refer to Fig. 28.)

1) Playback the tracking alignment tape WR5-1NP (NTSC) or WR5-1CP (PAL) (Ref. No. J-6).
2) Adjust the tape guide No. 2 until the input side waveform becomes flat.
3) Adjust the tape guide No. 3 until the input side waveform becomes flat.

☆ Zenith adjustment screws for the TG-2 and TG-3 do not need to be adjusted.

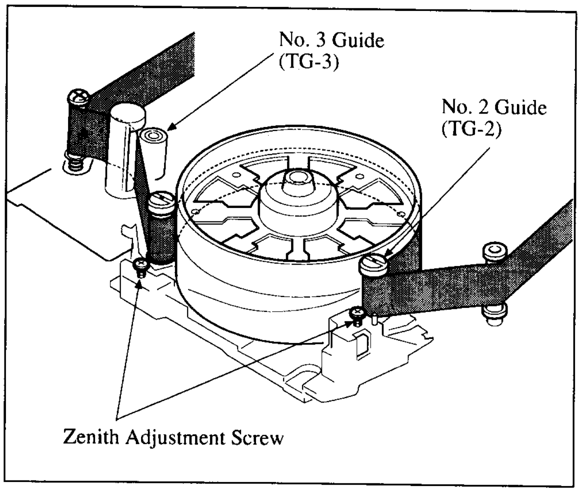


Fig. 28

4-3. No. 4 Guide (TG-4) Adjustment (Refer to Fig. 29.)

1) Playback a tape in REV mode.
2) Confirm that tape slack does not occur in between the guide No. 3 (TG-3) ① and Capstan ②. If tape slack is found, turn the height adjustment screw ④ of the Guide No. 4 (TG-4) ③ until tape slack is removed.
3) Playback a tape in FWD mode. Confirm that tape slack does not occur in between the guide No. 4 (TG-4) ③ and capstan ②. (Specification = 0.5 mm or less) If tape slack of more than 0.5 mm is found, turn the TG-4 nut ④ until the slack is 0.5 mm or less. Playback tape in REV mode and confirm that tape slack in between the guide No. 3 (TG-3) ① and capstan ② is 0.3 mm or less, the adjustment is complete.

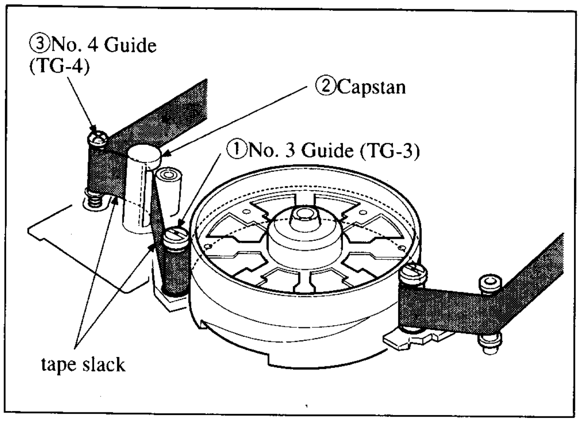


Fig. 29

4-4. CUE, REV Waveforms Check (Refer to Fig. 30.)

1) Playback the tracking alignment tape in REV mode.
   Confirm that pitches between the peaks of the waveform are equally spaced for 5 seconds or longer.
   The pitches are not equally spaced, perform sections "4-2. Tracking Adjustment" and section "4-3. No. 4 Guide Adjustment".
2) Playback the tracking alignment tape in CUE mode.
   Confirm that pitches between the peaks of the waveform are equally spaced for 5 seconds or longer.
   The pitches are not equally spaced, perform section "4-2. Tracking Adjustment".

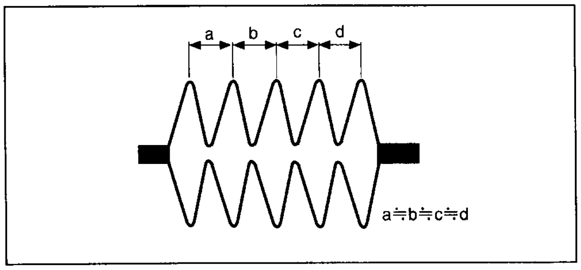


Fig. 30

4-5. Checks After Adjustments

4-5-1. Tracking Check

1) Confirm that amplitude of the RF waveform decreases to about 3/4 when the machine enters the PATH mode. (Refer to Fig. 31)
2) Confirm that the minimum amplitude (EMIN) of the RF waveform is 65 % or more of the maximum amplitude (EMAX). (Refer to Fig. 32)
3) Confirm that the RF waveform does not have too much fluctuation. (Refer to Fig. 33)

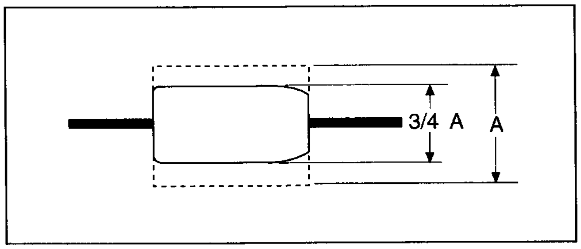


Fig. 31

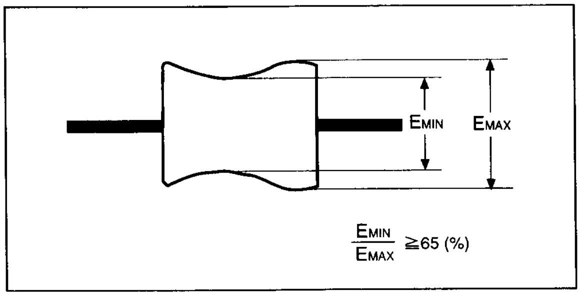


Fig. 32

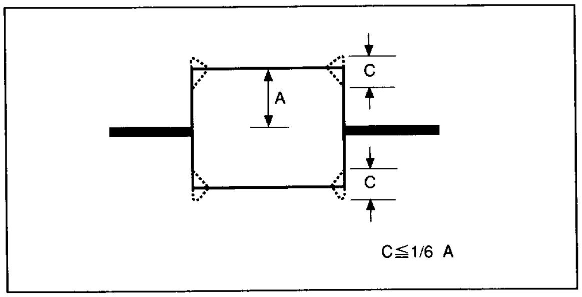


Fig. 33

4-5-2. Waveform Build-up Check (Refer to Fig. 34.)

1) Playback the tracking alignment tape.
2) Turn OFF the Track Shift mode.
3) Eject the tape once, insert and load the tape.
4) Start playing back the tape and confirm that the RF waveform builds up in three seconds with flat envelope. Confirm at this time that tape slack does not occur near pinch roller.
5) Playback the tape in CUE/REV and FF/REW modes respectively. Confirm that the RF waveform builds up in three seconds with flat envelope. Confirm at this time that tape slack does not occur near pinch roller.
6) Repeat the check items 3) to 5) again.

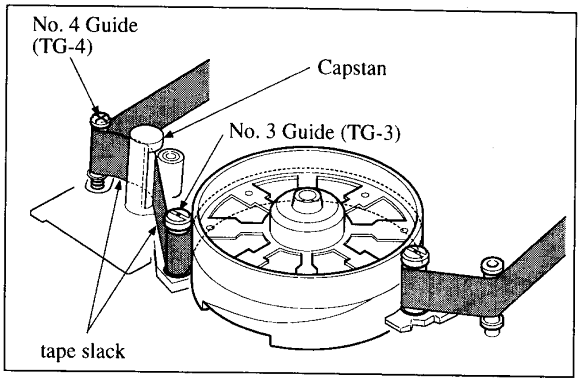


Fig. 34

4-5-3. Tape Pass Check (Refer to Fig. 35.)

1) Insert a thin video tape such as P6-120MP (NTSC) or P5-120MP (PAL). Playback the thin tape. Confirm that there is no clearance or curl of 0.3 mm or more at the following points: Upper flange of guide No. 2, upper flange of guide No. 3, upper and lower flanges of guide No. 4.
2) Confirm that there is no clearance or curl of 0.3 mm or more at each tape guide when the FF button is pressed from the playback mode to enter the CUE mode, and when the REW button is pressed from the playback mode to enter the REV mode.

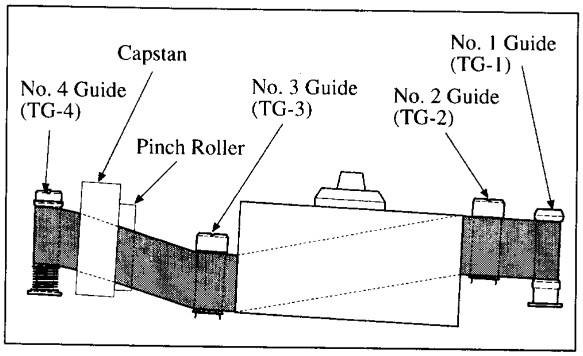
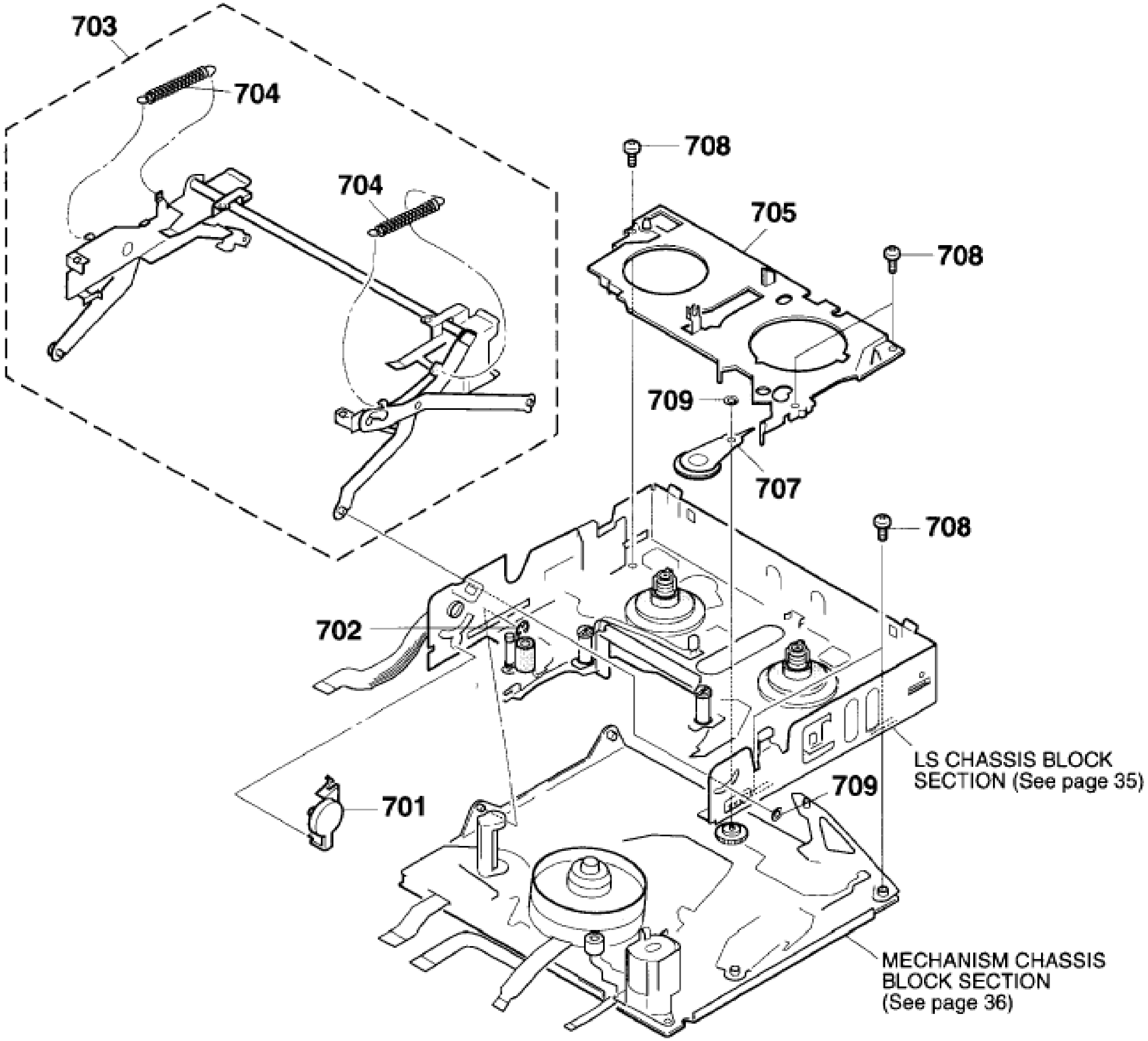


Fig. 35

5-1. Cassette Compartment Block Section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LS CHASSIS BLOCK SECTION (See page 35)
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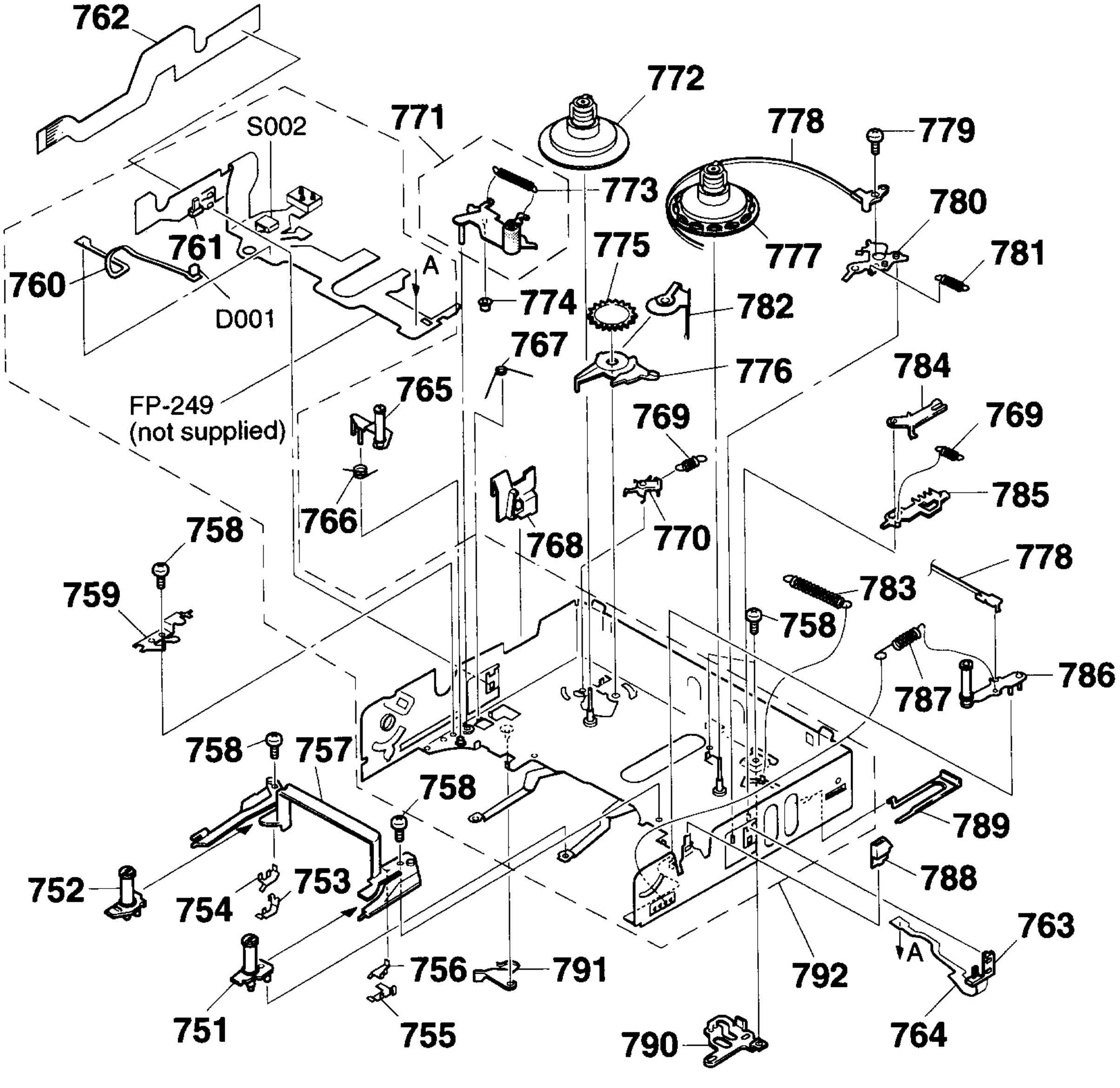
MECHANISM CHASSIS BLOCK SECTION (See page 36)

5-2. LS Chassis Block Section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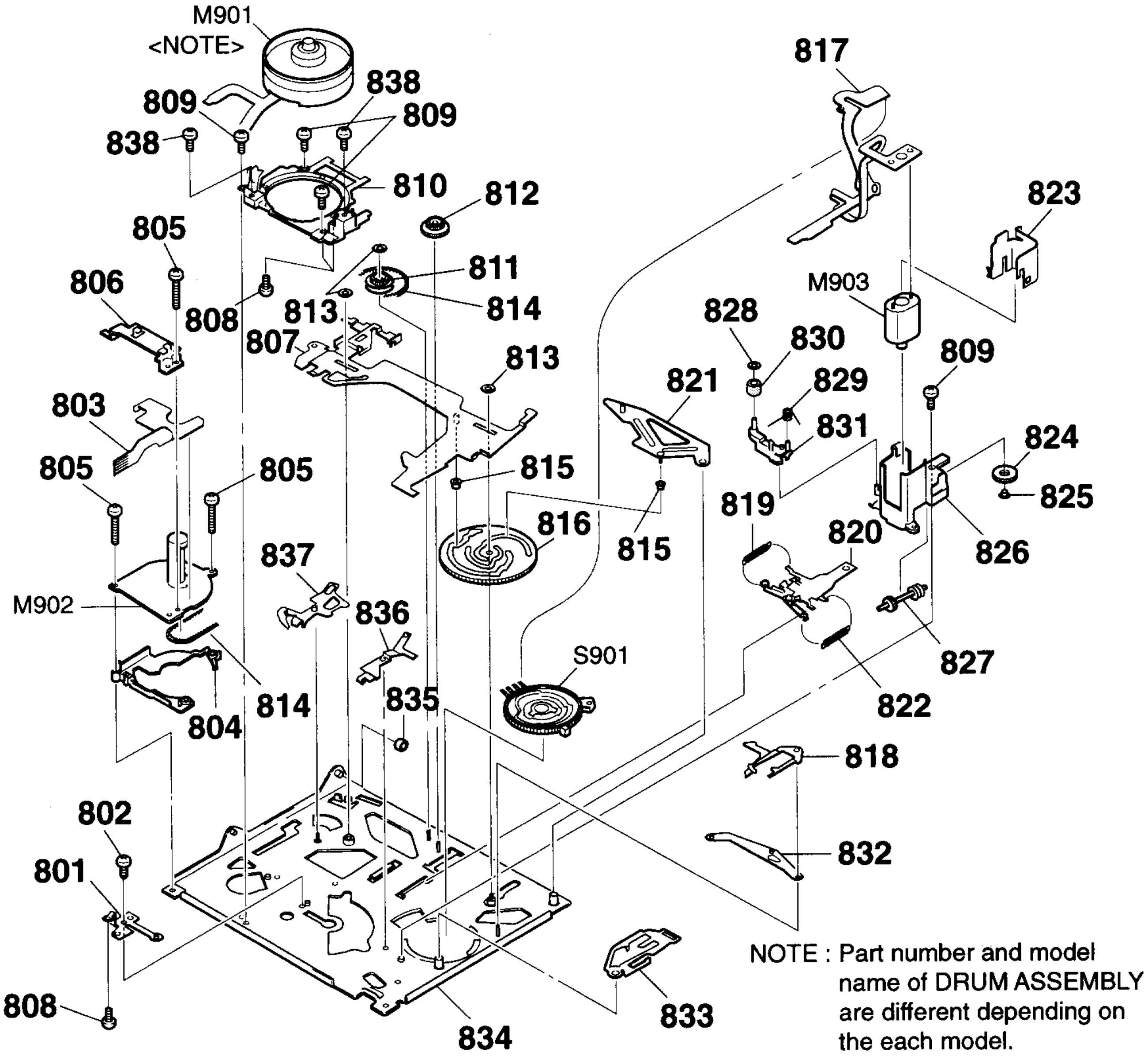
5-3. Mechanism Chassis Block Section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NOTE : Part number and model name of DRUM ASSEMBLY are different depending on the each model.